THE ART OF THE BOOK AND ITS ILLUSTRATION

THE VIRGIN IN GLORY

MINIATURE

From a manuscript in the Municipal Library, Nuremberg

Printed by C. H. Beck'sche Buchdruckerei, Noerdlingen (Germany)

By courtesy of Verlag Palm & Enke, Erlangen (Annual Das Schöpfrad, 1928)

THE ART OF THE BOOK AND ITS ILLUSTRATION

BY

JAN POORTENAAR

WITH A CHAPTER BY
Prof. Dr. MAURITS SABBE
CURATOR OF THE MUSEUM
PLANTIN-MORETUS, ANTWERP

AND A FOREWORD BY
C. H. St J. HORNBY

O
655.1
Poo

PHILADELPHIA
J. B. LIPPINCOTT COMPANY

Printed in Holland by
Drukkerij Buys & Zoon, Amsterdam

FOREWORD

When we consider how great an influence the invention of writing and subsequently that of printing have exercised upon world events it is somewhat astonishing to find how much ignorance prevails about these two arts, which perhaps more than any other have changed the course of history. We have therefore good reason to be grateful to the author of this volume for having made available to English-speaking readers, as well as to his own countrymen, the results of his intimate knowledge and practical experience of the subject.

The Art of the Book is indeed a wide and a very fascinating study, and in the following pages Mr. Jan Poortenaar has dealt with it in a manner both interesting and instructive. Starting from the earliest beginnings of the written word, he traces the history of calligraphy and typography down to the present day and treats of all the subsidiary arts which contribute to the making of the book beautiful. The invention of paper and of movable types, the lay-out of the printed page, presswork, illustrations and the technical processes of their reproduction, all find a place in his pages, and all are described in a way which makes them intelligible to the layman as well as to the professional printer. In fact this is just the sort of book that the layman requires to enable him to understand the numerous and often complicated processes which the production of a modern book demands.

It is easy to see that Mr. Poortenaar is an enthusiast. What is more important is that he writes with an intimate and personal experience of the subject of which he treats with so much knowledge and such admirable lucidity. The value of the book lies largely in the fact that it is written by an expert, but written for the ordinary man who is interested in books and wishes to know more of the secret of their production. Such an one will not turn in vain to these pages for the information which he seeks, and there are few book-collectors who will not find this book a useful addition to their library.

By no means the least valuable feature of the volume are the reproductions of types, illustrations, bindings and the like, which in a treatise of this kind are necessary to supplement the written descriptions. They are well chosen and cover a wide range, from the earliest known hieroglyphs down to the latest productions of the wood-engraver, the type-founder and the process-block maker.

I am glad to have had the privilege of writing this brief foreword to Mr. Poortenaar's book, because both as printer and as book-collector I am able to appreciate its value to all those who are desirous of learning something about this fascinating subject.

C. H. St J. HORNBY

BY WAY OF ACKNOWLEDGMENT

My thanks are due in the first place to Mr. C. H. StJ. Hornby whose famous Ashendene Press produced books which rank among the finest ever printed by a Private Press, for having introduced this volume to English and American readers.

Prof. Dr. M. Sabbe kindly allowed me to translate the chapter on Plantin which he had written for the Dutch edition of my book, and which is of so much interest to book-lovers.

Further, I would express my thanks to Mr. Horace Shipp for many invaluable suggestions. Himself a practical printer as well as a writer and critic, Mr. Shipp has worked over the chapters with me in a delightful collaboration of literary and typographical knowledge. The liberties which a Dutchman takes with his own language would seem to be beyond all limits in English, and his able pen has quietened down many a passage which would otherwise have been too flamboyant. This problem of language and English usage on one occasion at least spurred him into verse, when I queried the correct use of the title "Mr." with regard to fame, life, and death, and received the prompt reply:

When we are dead,
  And we are famous,
They leave out "Mr."
  When they name us.

If the living are
  World-famed, you can
Say "Poortenaar"
  And leave out "Jan".

What otherwise would have been "hard" labour was thus smilingly turned into poetry: a symbol of the friendly sublimation of our task.

Several artists allowed their works to be reproduced, and many firms have assisted me in giving information or in reading the proofs, as Messrs. Caslon & Co. kindly did with the pages dealing with type. The co-operation of many houses made it possible to include numerous Inset- and Appendix Plates, so indispensable for the reader, who is thus provided with type-forms and specimens of illustration which otherwise would not have been so accessible to him. I express my cordial thanks to them all:

ENGLAND

Ashendene Press, London
Ernest Benn, London
Briggs & Co., London
J. & E. Bumpus, London
Clarke & Sherwell, London, Northampton and Manchester
Dalziel Foundry, London
Farmer & Sons, London
Lorilleux & Bolton, London
Caslon & Co., London
Curwen Press, London
John Lane The Bodley Head, London
Marshall Hardy, Bradford
J. Miles & Co., London
Paramat, London
Bernard Quaritch, London
Maggs Bros., London
White & Co., London
Wightman & Co., London
Spalding & Hodge, London

UNITED STATES

American Type Founders, London and New Jersey
The Press of the Woolly Whale, New York

GERMANY

Bauer Typefoundry, Frankfurt a.M.
Beck'sche Buchdruckerei, Nördlingen
Klingspor Typefoundry, Offenbach a.M.
Haag-Drugulin, Leipzic
C. Rebner & Co., Berlin
C. G. Boerner, Leipzic
Ludwig & Mayer, Frankfurt a.M.

HOLLAND

Boelaars & Zonen, The Hague
Buys & Zoon, Amsterdam
Chevalier, Rotterdam
Enschedé & Zonen, Haarlem
General Engraving Works, Amsterdam
Ten Hagen's Drukkerij, The Hague
Lankhout & Cie, The Hague
Lumax, Utrecht
Linotype, Amsterdam, New-York, Berlin, London
Van Leer & Co, Amsterdam
Ned. Rotogravure Mij, Leyden
Van Waesberge, Hoogewerff and Richards, Rotterdam
Machinehandel L. Coster, The Hague
Machinehandel M.A.G., Amsterdam
Machinehandel Mahez, Amsterdam

ITALY

Bemporad & Figlio, Florence
N. de Arcangelis, Florence
Ulrico Hoepli, Milan

BELGIUM

De Sikkel, Antwerp

FRANCE

Deberny-Peignot, Paris
Malherbe & Cie, Paris
Léon Pichon, Paris

J. P.

ILLUSTRATIONS

		Page
1	The origin of our letters	2
2	Capitalis quadrata	5
3	Capitalis rustica	5
4	Uncials	5
5	Half-uncials	5
6	Early mediæval forms	7
7	Late mediæval forms	7
8	Gothic letters	7
9	Letters by Pacioli	8
10	Tory's construction	9
11	Tory's construction	9
12	Dürer's alphabet	11
13	Jenson's roman	12
14	Device of Poncet le Preux	15
15	Van Dyck's roman	15
16	Device of Josse Bade	15
17	The Pre-Morris style	18
18	"Italienne" type face	19
19	The Pre-Morris style	19
20	The Pre-Morris style	19
21	Tory's Latin and Semi-Gothic letter	21
22—22a	Title pages by Fournier and Bodoni	22
23	Caslon Gothic	24
24	A page of Caslon Types	26
25	"Monotype" type faces	28
26	"Biblia Pauperum"	31
27	Woodcut from "Ars Moriendi"	35
28	Types cast in clay	37
29	The Cologne Chronicle	37
30	The first dated book printed in Amsterdam	45
31	Device of Fust and Schoeffer	45
32	A page by Froben	50
33	A page by Froben	51
34	A page by Pynson	52
35	A page by Pynson	53
36	The letter D	55
37	Dürer's Triumphal Car	55
38	A typefounder	58
39	A printer	58
40	A decorative letter	58
41	A paper-maker	59
42	A bookbinder	59
43	Device of Pierre Levet	59
44	Title page, Manutius	62
45	A page from "Poliphilus"	62
46	Device of Plantin	62
47	Illustration by Severini	63
48	Woodcut by David Jones	63
49	Title page by Moreau	67
50	Title page by Bodoni	67
51	A page by Pigouchet	69
52	Title page by Tory	69
53	Holbein's "Dance of Death"	69
54	Anonymus woodcut, "Dance of Death"	69
55	A page by Léon Pichon	70
56	Title page by Plantin	70
57	Device of André Bocard	71
58	Title page, the Elsevier Press	71
59	Device of Andrew Millar	71
60	Device of William Caxton	77
61	The First Authorized Version of the English Bible	79
62	"The Discouery of Virginia"	81
63	A page by Caxton	83
64	Wood-engraving by Bewick	83
65	A page, Auchinleck Press	83
66	A page from Morris's "Chaucer"	85
67	Woodcut by Douglas Percy Bliss	90
68	Pen drawing by Arthur Rackham	90
69	Design for the jacket of "Sea Sequel"	91
70	Pen drawing by Rockwell Kent	91
71	Title page, "An Ode on Printing"	93
72	A page by F. W. Goudy	93
73	Types cast by the American Type-Founders	95
74	A page by Dard Hunter	97
75	Printer's ornaments in Caslon's Specimen Book	99
76	Bruce Rogers' use of ornaments	99
77	The compositor's case	105
78	A type letter	105
79	The compositor at his frame	105
80	A carricature on the composing machines	105
81	The Linotype	107
82	Light jobbing platen press	107
83	Standard correction marks	114
84	Diagram of the paper-making machine	121
85	Diagram of presses	133
86	Flat-bed cylinder press	133
87	Imposition scheme	135
88	Device of Mathias of Goes	139
88a	„ „ Thierry Martens	139
89	Bookbinding, rounding and backing	141
90	„ the cords	141
91	„ sewing	141
92	Device of Jenson	147
93	Etched ornament	147
94	Letter	147
95	Device of Thielman Kerver	147
96	Woodcut printed from the wood-block	149
96a	Woodcut printed from an electro	149
97	Title page, "Moby Dick" by Rockwell Kent	149
98	William Morris, Title page	162
99	„ „ Text page	162
100	Device of the Nonesuch Press	163
101	Wood-engraving by Nora S. Unwin	163
102	Woodcut by F. Masereel	163
103	Pen drawing by John Austen	164
104	„ „ „ B. Aylmer	164
105	„ „ „ Arthur Rackham	165
106	Typographie pure, "De Motu Cordis"	167
107	"Musices Opusculum", 1487	170
108	The earliest music printed in England	171
109	Frontispice and title page, 17th century	171
110	Music set up from type	171

PLATES

		Between pages
I	Roman inscription	8— 9
II	Greek manuscript	8— 9
	Handwriting of Thomas à Kempis	8— 9
III	Alphabet by Hans Weyditz	8— 9
IV	Erasmus by Dürer	8— 9
V	The scribe Jean Mielot	40— 41
	A page from the "Speculum"	40— 41
VI	Page from a gradual	40— 41
	The 42-line Bible	40— 41
VII	The Book of Kells	40— 41
	Palimpsest	40— 41
VIII	A page by Fust and Schoeffer	40— 41
IX	A page by Antoine Vérard	56— 57
X	A page by Simon de Colines	56— 57
XI	A page by Gerardus da Ponte	56— 57
XII	A page by Girolamo Soncino	56— 57
XIII	A page by Joaquin Ibarra	72— 73
XIV	Engraved title page	72— 73
XV	A page by Bertieri	72— 73
	A page by Cambellotti	72— 73
XVI	A page by A. A. M. Stols	72— 73
	Woodcut and drawing from "Alice in Wonderland"	72— 73
XVII	Letter by Mary I	88— 89
XVIII	A page by Baskerville	88— 89
XIX	Lay-out and proofs "Alice in Wonderland"	88— 89
XX	Illustrative type-setting	88— 89
XXI	The Monotype	120—121
	The inking rollers of the cylinder press	120—121
XXII	The Letter-cutter Fleischman	120—121
XXIII	Bookbinding machines	120—121
XXIV	The making of paper	120—121
XXV	Horn Book	136—137
	Bookplate	136—137
	Mediæval bookbinding	136—137
XXVI	"Codex Aureus"	136—137
XXVII	A Grolier binding	136—137
XXVIII	Irish binding	136—137
XXIX	Binding by Chas. Mearne	136—137
XXX	Library, Cesena	136—137
XXXI	Library, Ravenna	136—137
XXXII	Library, Yale University	136—137
	Platen press with automatic feeder	136—137
XXXIII	"St. Christopher"	168—169
	A page by Eric Gill	168—169
XXXIV	The printing of an etching	168—169
XXXV	A camera for photographic reproduction	168—169
XXXVI	Photogravure	168—169
XXXVII	Title page by Stephen Gooden	168—169
XXXVIII	Engraving from Cervantes	168—169
XXXIX	Aquatint by Debucourt	168—169
XL	The old printing office of Plantin	168—169

TAILPIECES

On title page: Anonymus woodcut, 17th century.
„ page 28: Woodcut by Victor Stuyvaert.
„ „ 48: Pen-drawing by Rockwell Kent.
„ „ 75: Woodcut by Victor Stuyvaert.
„ „ 131: Pen-drawing by Flora Kendrick.
„ „ 168: Pen-drawing by Hedvig Collin.
„ „ 175: Woodcut by Victor Stuyvaert.

ERRATA

Plate III. *For* bij *read* by.

Plate XXXII. *For* Yersey *read* Jersey.

Plate XL. *For* resistence *read* resistance.

CONTENTS

		PAGE
I	The Form of Letters and Type faces	1
II	The Invention of Printing	29
III	The Development of Printing in Western Europe	49
IV	Printing in England, historical and contemporary	76
V	Printing in America, from the beginnings to Bruce Rogers	92
VI	Type and Type-setting	102
VII	The Manuscript and Proof-reading	111
VIII	Paper and Paper-making	116
IX	The Lay-out and Book-arrangement	126
X	Press-work	132
XI	Bookplates, Bookbindings, and Libraries	137
XII	The Artist as Illustrator; technical processes	146
XIII	Photographic Illustrations; technical processes	155
XIV	Some Principles of Illustration	161
XV	Music-printing	169
XVI	Christopher Plantin and the Museum Plantin-Moretus at Antwerp *)	172
	Index	177

*) By Prof. Dr. M. Sabbe

BY THE SAME AUTHOR:

THE TECHNIQUE OF PRINTS, with a Foreword by Campbell Dodgson, C. B. E.
THE BODLEY HEAD, LONDON

AN ARTIST IN THE TROPICS, with a Foreword by Frank Brangwyn, R.A.
SAMPSON LOW, LONDON

DANS EN WAJANG, with six etchings by the author. *ENSCHEDÉ, HAARLEM*

DE LEGENDE VAN ST. JULIANUS, with twenty-two woodcuts.
WERELDBIBLIOTHEEK, AMSTERDAM

EEN KUNSTREIS IN DE TROPEN, with forty-nine plates.
THIEME & CIE, ZUTPHEN

BOROBUDUR, six etchings, text by Prof. Dr. N. J. Krom, with a Foreword by Laurence Binyon. *LUZAC & CO, LONDON*

ETSKUNST, published by the author and *DE SIKKEL, ANTWERP*

BOEKKUNST EN GRAFIEK, published by the author and
DE SIKKEL, ANTWERP

VAN PRENTEN EN PLATEN, published by the author and the
STANDAARD BOEKHANDEL, ANTWERP

CHAPTER I

THE FORM OF LETTERS AND TYPE FACES

Books and letters, ranging from the Bible and poetry to the simplest communications of everyday life have become the daily bread of all of us to such an extent that few ever stop to think how they came into being. At one time, however, people thought much about them. Slowly the forms now familiar to us have evolved, and only after ages of effort came the ability to read at a glance.

Rightly to understand what the shapes of letters are—those shapes which convey to our minds all our knowledge from the simplest traffic signs to the beauty of imaginative literature and the facts of science—to understand why they are thus shaped, what they really are and should be, we must have some knowledge of their growth. Mists of antiquity spread over the centuries in which tokens were created by magicians and priests, making them a specially cultured "caste" among their fellowmen, but we can still recognize the principal phases those tokens assumed, and can thus trace their development from their supernatural origin to common everyday signs.

If we are indebted to the Arabs for the main shape of the ciphers we generally use, it is to Rome we still pay tribute when reading or writing. Though the Romans' ciphers are but sparingly used by us, our lettering almost entirely depends upon the forms devised by them before the beginning of our era, and brought to the highest degree of perfection long before our ancestors could be said to constitute a civilized commonwealth.

Roman lettering was based on foundations left over from Greek civilization, and Greek forms of writing had been derived and developed from still older characters, used by the Phoenicians, which in turn had their origin in the earliest known signs made to communicate thought: the hieroglyphs of ancient Egypt. Illustration 1 shows how a drawing, representing an animal, grew into a stylized sort of ornament—a shorthand sign we might call it—and developed internationally. Happily intellectual life knows neither nationalities nor frontiers, so the path leads to the universally recognized alphabet of to-day.

Roman forms remained in use for writing purposes over a period of about 1500 years after the beginning of our era. Then quicker methods were devised, the art of printing arose, with the result that all over Europe new shapes of letters had to be created, before the art could be put into practice. Everyone who started to print had to start by designing and then making his own type. The pioneer printers of those days were in most cases scholars, or at least cultured men. The Renais-

1

BY THE SAME AUTHOR:

THE TECHNIQUE OF PRINTS, with a Foreword by Campbell Dodgson, C. B. E.
THE BODLEY HEAD, LONDON

AN ARTIST IN THE TROPICS, with a Foreword by Frank Brangwyn, R.A.
SAMPSON LOW, LONDON

DANS EN WAJANG, with six etchings by the author. *ENSCHEDÉ, HAARLEM*

DE LEGENDE VAN ST. JULIANUS, with twenty-two woodcuts.
WERELDBIBLIOTHEEK, AMSTERDAM

EEN KUNSTREIS IN DE TROPEN, with forty-nine plates.
THIEME & CIE, ZUTPHEN

BOROBUDUR, six etchings, text by Prof. Dr. N. J. Krom, with a Foreword by Laurence Binyon. *LUZAC & CO, LONDON*

ETSKUNST, published by the author and *DE SIKKEL, ANTWERP*

BOEKKUNST EN GRAFIEK, published by the author and
DE SIKKEL, ANTWERP

VAN PRENTEN EN PLATEN, published by the author and the
STANDAARD BOEKHANDEL, ANTWERP

CHAPTER I

THE FORM OF LETTERS AND TYPE FACES

Books and letters, ranging from the Bible and poetry to the simplest communications of everyday life have become the daily bread of all of us to such an extent that few ever stop to think how they came into being. At one time, however, people thought much about them. Slowly the forms now familiar to us have evolved, and only after ages of effort came the ability to read at a glance.

Rightly to understand what the shapes of letters are—those shapes which convey to our minds all our knowledge from the simplest traffic signs to the beauty of imaginative literature and the facts of science—to understand why they are thus shaped, what they really are and should be, we must have some knowledge of their growth. Mists of antiquity spread over the centuries in which tokens were created by magicians and priests, making them a specially cultured "caste" among their fellowmen, but we can still recognize the principal phases those tokens assumed, and can thus trace their development from their supernatural origin to common everyday signs.

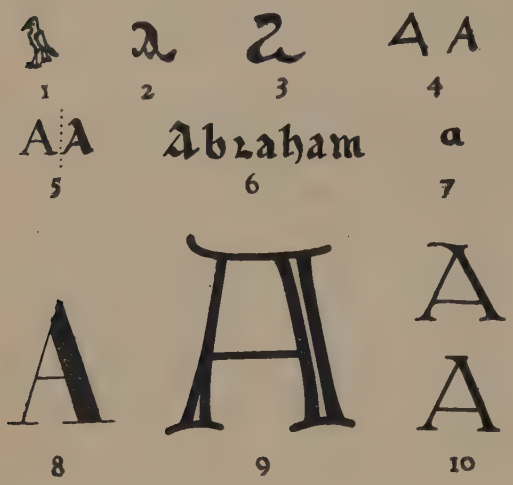
If we are indebted to the Arabs for the main shape of the ciphers we generally use, it is to Rome we still pay tribute when reading or writing. Though the Romans' ciphers are but sparingly used by us, our lettering almost entirely depends upon the forms devised by them before the beginning of our era, and brought to the highest degree of perfection long before our ancestors could be said to constitute a civilized commonwealth.

Roman lettering was based on foundations left over from Greek civilization, and Greek forms of writing had been derived and developed from still older characters, used by the Phoenicians, which in turn had their origin in the earliest known signs made to communicate thought: the hieroglyphs of ancient Egypt. Illustration 1 shows how a drawing, representing an animal, grew into a stylized sort of ornament—a shorthand sign we might call it—and developed internationally. Happily intellectual life knows neither nationalities nor frontiers, so the path leads to the universally recognized alphabet of to-day.

Roman forms remained in use for writing purposes over a period of about 1500 years after the beginning of our era. Then quicker methods were devised, the art of printing arose, with the result that all over Europe new shapes of letters had to be created, before the art could be put into practice. Everyone who started to print had to start by designing and then making his own type. The pioneer printers of those days were in most cases scholars, or at least cultured men. The Renais-

1

sance, that great revival of ancient art and science, was stirring the whole of Europe, and the writings of Romans and Greeks were being studied with vivid interest. Naturally the shape of the lettering which contained the sought-after wisdom was also a subject of intrinsic study, both from an aesthetic and a practical point of view. If the Middle Ages had turned men's minds towards Heaven, the 15th century focussed interest upon the forms of human life. This form of intellectual activity



Ill. 1. The origin of our letters.
1. Egyptian hieroglyph.
2. Old Egyptian (Coptic) writing, a token made of the drawing.
3. Old Egyptian (Hieratic) form (reverse of 2).
4. Greek forms.
5. Roman forms, developed from 4. Left: inscription in stone, Right: pen-made A.
6. French writing, 13th century. Note the capital and the small A have identical shapes.
7. Our present-day small a, derived from 6.
8. Type, designed by Didot, "roman", 1819.
9. Type designed by J. Erbar, "mediæval", 1914. Typefoundry Ludwig & Mayer, Frankfurt a.M.
10. Type, designed by W. Tiemann, 1909. Typefoundry Gebr. Klingspor, Frankfurt a.M.

became known as the humanist movement, and the writing of these times as humanistic script.

During these fifteen centuries, however, writing had assumed a great variety of forms, and these we must review in brief before we can understand the early printed shapes, the forbears of present-day book work, the humanistic characters.

This re-birth of ancient culture, having its origin in Italy, rich in the remains of Roman civilization, meant a revival of the Roman architectural styles. In the other European countries Christianity had created the Gothic style with its pointed arches, which flourished about the 12th and 13th centuries. Although Gothic became the glory of England, France, Germany, and other countries, it did not gain supreme influence on the other side of the Alps, where Roman culture had never died. Here classicism had its roots whereas it had been forced upon the other European peoples and countries by conquest. The North, beyond the Alps, meant barbarism.

Thus Gothic forms, both in architecture and in writing, were those of barbarians to the scholars of Italy, since they came from the non-classic, "uncivilized" North. The very name Gothic, derived from the hordes of Goths which invaded and destroyed the Roman empire, expresses this dislike, the Gothic style itself having no connection what-

ever with the old wild tribes. Bramante, whom Michel Angelo praised as the greatest builder alive, called this Gothic architecture a product of barbarism. When St. Peter's at Rome was to be rebuilt by this same Bramante, he had so many mediæval mural paintings, mosaïcs, and sculpture destroyed, that quite openly the name of the Destroyer was given to him. Gothic forms had also greatly influenced the monks' writing abroad—they were almost the only men who had acquired this art—and thus it is easily understood that two characteristic forms of lettering came to be used in early printing: Gothic in Germany and France, humanistic Roman (elsewhere known as *"Antiqua"*, antique) in Italy. The greatest artists of the age, Leonardo da Vinci, Albrecht Dürer, to name only two of the most famous, endeavoured to arrive at the finest shapes. The best engravers, qualified by years of study and exercise, were employed to engrave their designs for the printers.

Thus the shapes of the old printing types, which spread over Europe in a few years, were the result of elaborate study by supreme artists, a structure erected on the basis laid by similar fine minds in the days of ancient Rome.

These letters (if we neglect variations, of which we will speak later) held sway for practically three or four hundred years. Then a new period came—a period in which once more the designing of letters became the work of many. This time, the myriad designers were no great artists, no scholars, nor had they had the slightest training or preparation for their work. The nineteenth century came on the scene with its rapidly increasing populations, with its machinery and industrialization of all branches of handiwork, its innumerable inventions. Lithography and block-making by a variety of processes were suddenly placed in the hands of everybody. The printers had to provide the growing industries with circulars, advertising prospectuses, posters, and the like; and in this way a veritable deluge of deformities overflowed the so-called civilized world. The few manipulations necessary for exercising the new processes were easily learned; but knowledge of and feeling for artistic matters could not similarly be poured into the thousands of factory hands in a fortnight. And even if they could have been, nobody would have had time to think about them — the customer was waiting, and a drawing had to be made in a hurry, lithographed or photographed mechanically and printed in ten thousand copies. Hurry and ugliness took the place of the meditation, forethought, and careful execution of Da Vinci, Dürer and the skilled engraver, to say nothing of the mediæval scribe (Pl. V) whose writings were marvels of beauty.

Anyone who realizes that there is greater beauty in lettering, as shown on Plates I, II, IV than in such as ill. 17 to 20, will find himself confronted with the question, why is this so? For our reply we must do what Da Vinci and Dürer did, however old-fashioned this may appear; we must

go back some two thousand years, and go to school with the Romans.

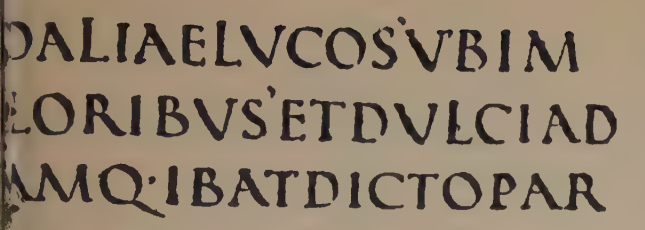
Roman writing possessed certain characteristics, based on the various purposes for which it was intended. Firstly, it has been preserved in an official, monumental shape, applied to inscriptions in honour of emperors, placed on columns or triumphal arches, and tomb stones. Trajan's column and Titus's triumphal Arch are famous—alike for their architectural grandeur and lettering; while a tomb stone as reproduced on Pl. I shows us its great dignity and magnificent rhythm. It is, indeed, "the grandeur that was Rome" and a veritable Caesar in letter form. The oldest *written* letters of this *"capitalis quadrata"* are shown in illustration 2. It is the lettering used for valuable books, important documents, etc., and although made with the reed pen, it was based on the carved forms just mentioned.

This square shape, however, was found to occupy too much space in the case of longer texts. Thereupon letters were made narrower and written less elaborately and with less detail. This difference in width, of little account in short inscriptions, becomes important if multiplied by hundreds and thousands of letters; and even the saving of time was considerable when works of ancient authors were multiplied by copyists writing them. This book hand, the so-called *"capitalis rustica"*, a less formal capital, is shown in the next illustration. It is less a "designed" and more a "written" letter.

Quicker writing again may be seen in illustration 4; the four strokes which constitute an E, for example, are reduced to two by melting three together into one curved line. In these *"uncials"* a circular form takes the place of the rectangular shapes of the first capitals, and from this it is but a small step to the *"half-uncials"*, in which ascenders and descenders are more pronounced, and to the sloping, quickly scribbled, current *"cursivi"* of the wax tablets, employed for short notes and messages.

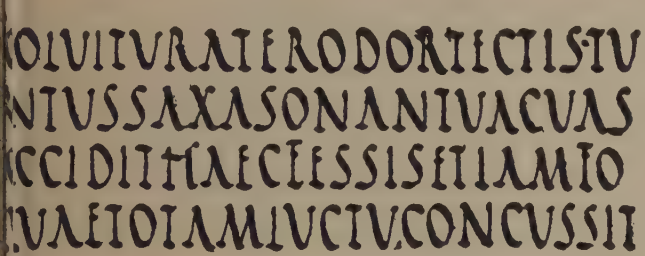
These forms are the fundamental ones of all our printing to the present day, and it is, therefore, important to realize that they came into being through a medium which we still employ, the pen. In other words, the upstrokes are thin and the downstrokes thick, and as our printing is but an offspring of our writing, a stylized form of it, the same principle is the only sound one, if a difference is made.

From these Roman hands early mediæval writing developed national characteristics. Nations formed themselves after the fall of the Roman Empire, and developed a life of their own, free from the tyranny of Rome. The Visigoths in Spain, the Longobards in Italy, the Merovingian kings in France, Anglo-Saxon and Irish monks in the British isles made writing typical of their particular country and ornamental style. The Book of Kells (Pl. VII) is one of the most famous manuscripts in existence on account of the great beauty of its lettering and



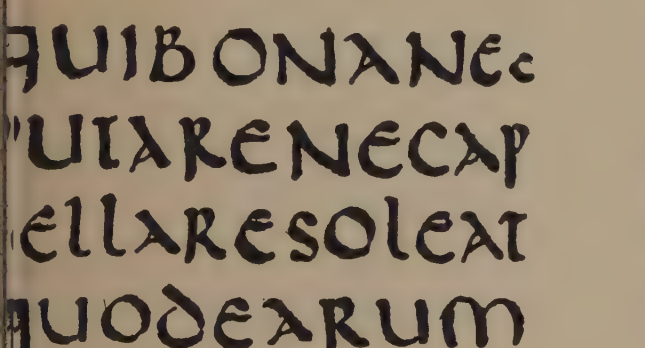
IDALIAE LUCOS UBI M(OLLIS)
FLORIBUS ET DULCI AD
IAMQUE IBAT DICTO PAR(ENS)

Ill. 2. Pen-made Roman "capitalis quadrata", 4th century.



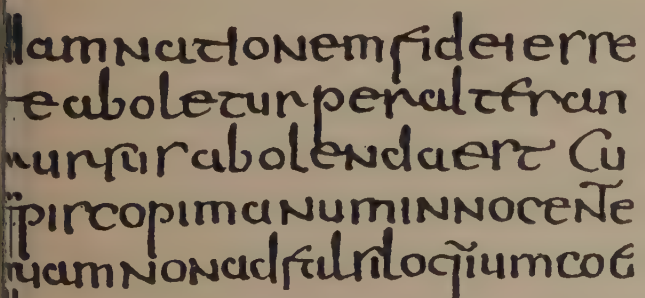
VOLVITUR ATER ODOR TECTIS TU(M)
INTUS SAXA SONANT VACUAS
ACCIDIT HAEC FESSIS ETIAM FO(RTUNA)
QUE TOTAM LUCTU CONCUSSIT

Ill. 3. Pen-made Roman "capitalis rustica", 4th century.



QUI BONA NEC
PUTARE NEC AP
PELLARE SOLEAT
QUOD EARUM
RERUM VIDE(ATUR)

Ill. 4. Pen-made Roman "uncials", 4th century.



damnationem fidei esse
te aboletur per alteram
rursus abolenda est cu(ius)
episcopi manum innocente(m)
(linguam non est ad falsiloquium coe (gisti)

Ill. 5. Pen-made Roman "half uncials", 4th century. From E. Maunde Thompson, "Greek and Latin Paleography".

decoration, and derives its name from the monastery of Kells in Ireland; it is now preserved in Dublin. The Anglo-Saxon Alcuin of York, on his way to Rome, met Charlemagne at Parma in 781, and was invited by that monarch to correct the Bible so as to bring conformity in its text. When in or about 789 a renewed writing of the canon of the mass was ordered, Charlemagne, the Napoleon of his day, may have had an open eye for the political advantages of uniform handwriting in his kingdom, as well as for its beauty. The latest research has made clear that Alcuin himself had no share in forming the famous hand of the French scribes. But it was in Alcuin's Abbey of St. Martin at Tours that Carolingian writing reached its noblest form, and from here it spread all over the countries governed by Carolus Magnus, whose name was given to this writing (ill. 6). It is this handwriting which had so much influence in the days of the Renaissance. It is very much akin to half-uncial Roman writing, the rounded forms of which correspond to, and were influenced by, the round arches of Roman architecture. These also spread over Europe in the first centuries of the Christian era, churches and monasteries being constructed everywhere. Later, both architectural and written forms became more angular and elongated (ill. 7). To a certain extent this "Gothic" lettering has associated itself with the Christian Church; not only was it employed by the Papal chancery, not only were the first Bibles printed in Gothic type, but in ecclesiastical documents, church books, etc. it still survives. The Gothic or "black" letter developed its finest form in the days of Albrecht Dürer, and in such books as "*Theuerdanck*". A specimen of a decorative Gothic title page is shown in illustration 8, while Plate IV gives an example of Dürer's lettering and engraving, both equally admirable.

On account of its angular, "broken" character the national German script is called "Fraktur", whereas to the rounded Gothic lettering is given the name "Schwabacher", of which the origin is unknown. Although the first pure "roman" was printed by Rusch, a German, in all countries with the exception of Italy, Gothic letters were generally used in writing and, consequently, in early printing. But behind the bulwark of Roman civilization such an aversion was felt towards these, that the German monks, Sweynheym and Pannartz, who brought the new art there, cut a roman type for their books, the first of which was the "*Lactantius*" of 1465. Roman lettering in its Carolingian form provided the example which was closely followed, many Carolingian manuscripts being in the library of the monastery at Subiaco, where they erected their press. The scriptorium of the monastery was naturally the room where the press took the place of the scribe. Not alone at Subiaco but all over Italy printers preferred the "roman", the master-printer of Venice, Aldus Manutius, employing one which is so fine that the name of the book printed with it is still being given to present-day letters, moulded

INCIPIT

DIALOGI: III:

UBI MULTITUDO HOMI

NUM INSPERATA OCCURRIT

audire ꝫ allum desīmar

aniuiratibus locuturo

Ubi puellam duodecennem ab

utero mutam curauit

Ubi oleum subeiut benedicto

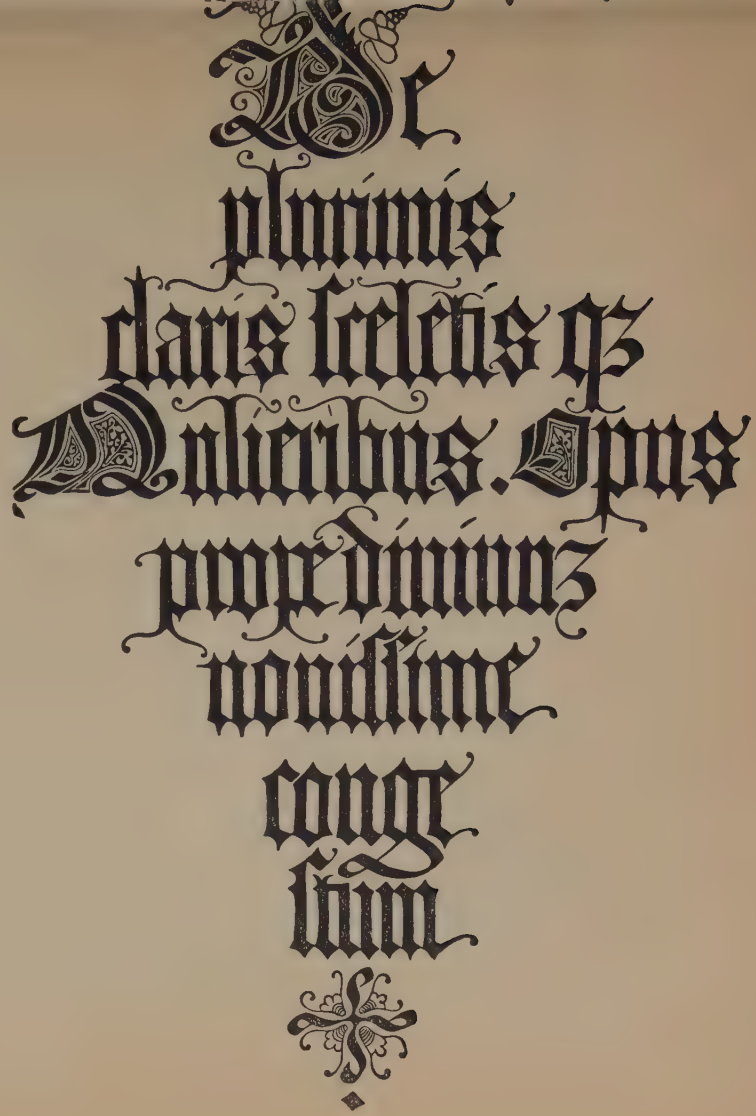
Ill. 6. Early mediæval forms, Carolingian, 9th century.

HCIPIT·IONAS·

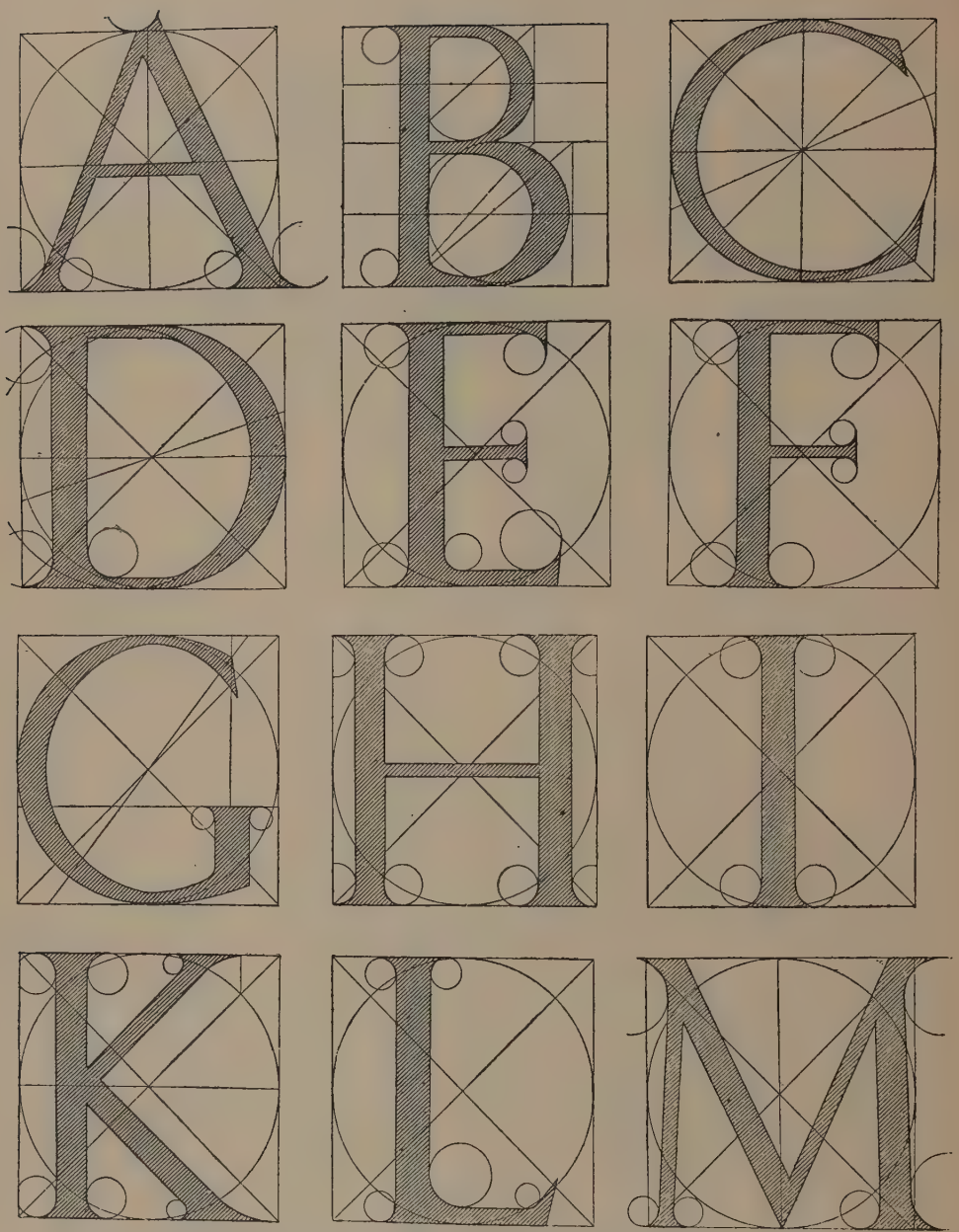
Johannes de

HEMSO

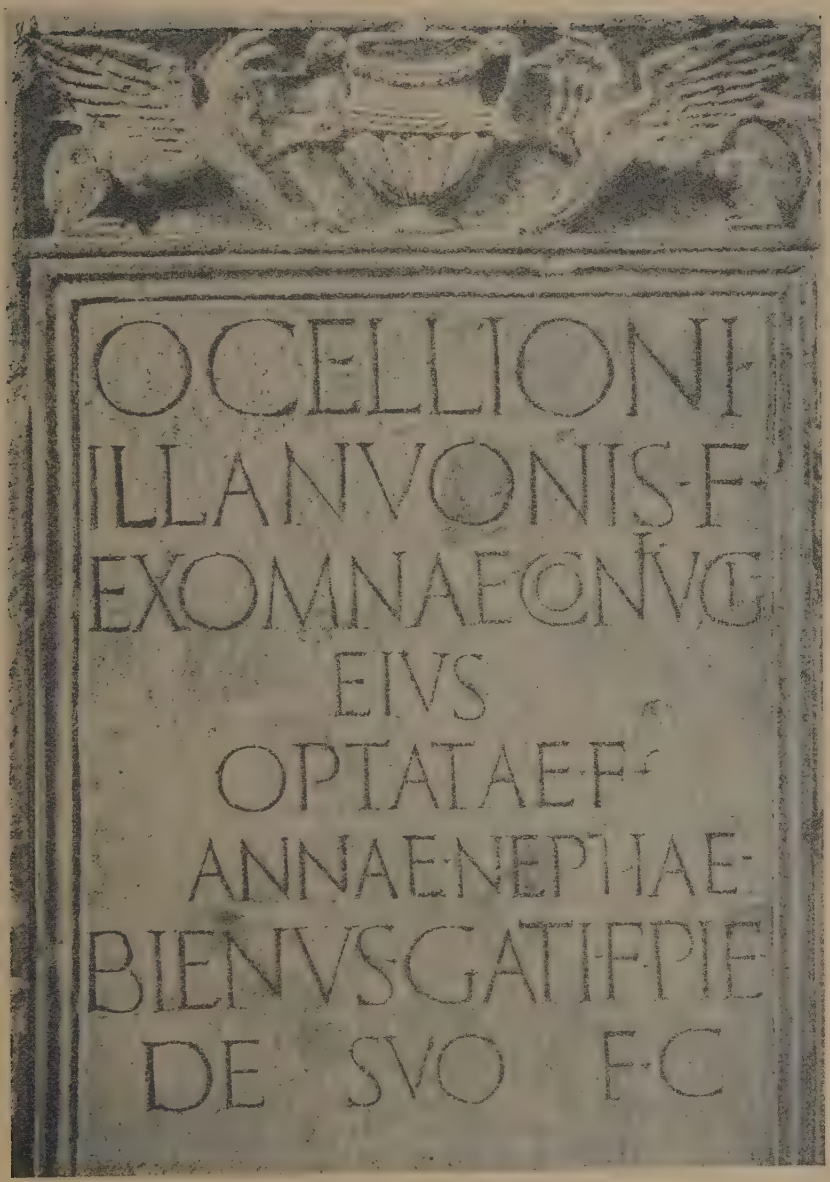
Ill. 7. Late mediæval forms (*Incipit* or *Hic Incipit* in singular or plural is the old formula with which books began; Morris revived it with his "Here beginneth" etc.). Top: Letters from a Latin Bible, Flemish, 1148. Centre: Gothic Lettering, English, 1269. Bottom: Lombardic forms, often used as "versals" to decorate new paragraphs in manuscripts and early printed books.



Ill. 8. Gothic letters. Title page cut in wood and printed by Laurentius de Rubeis de Valentia, Ferrara, 1497.

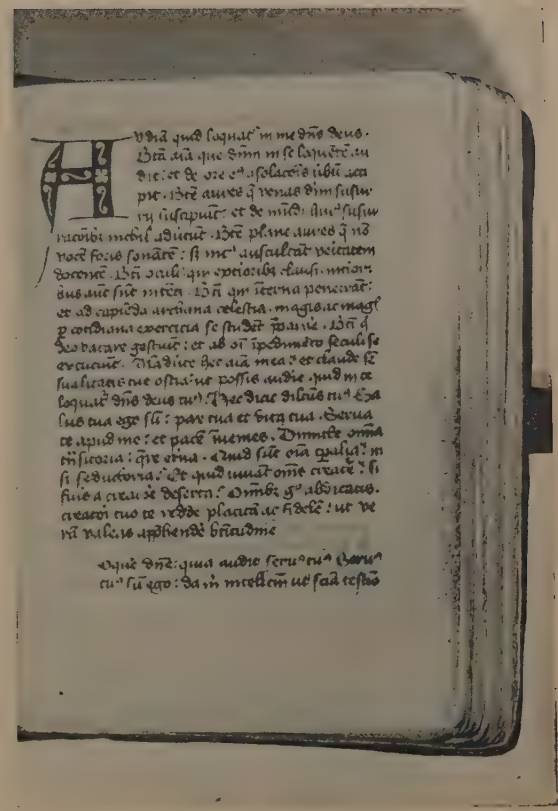


Ill. 9. The square and the circle of the Romans. Letters constructed by Pacioli, 1509.



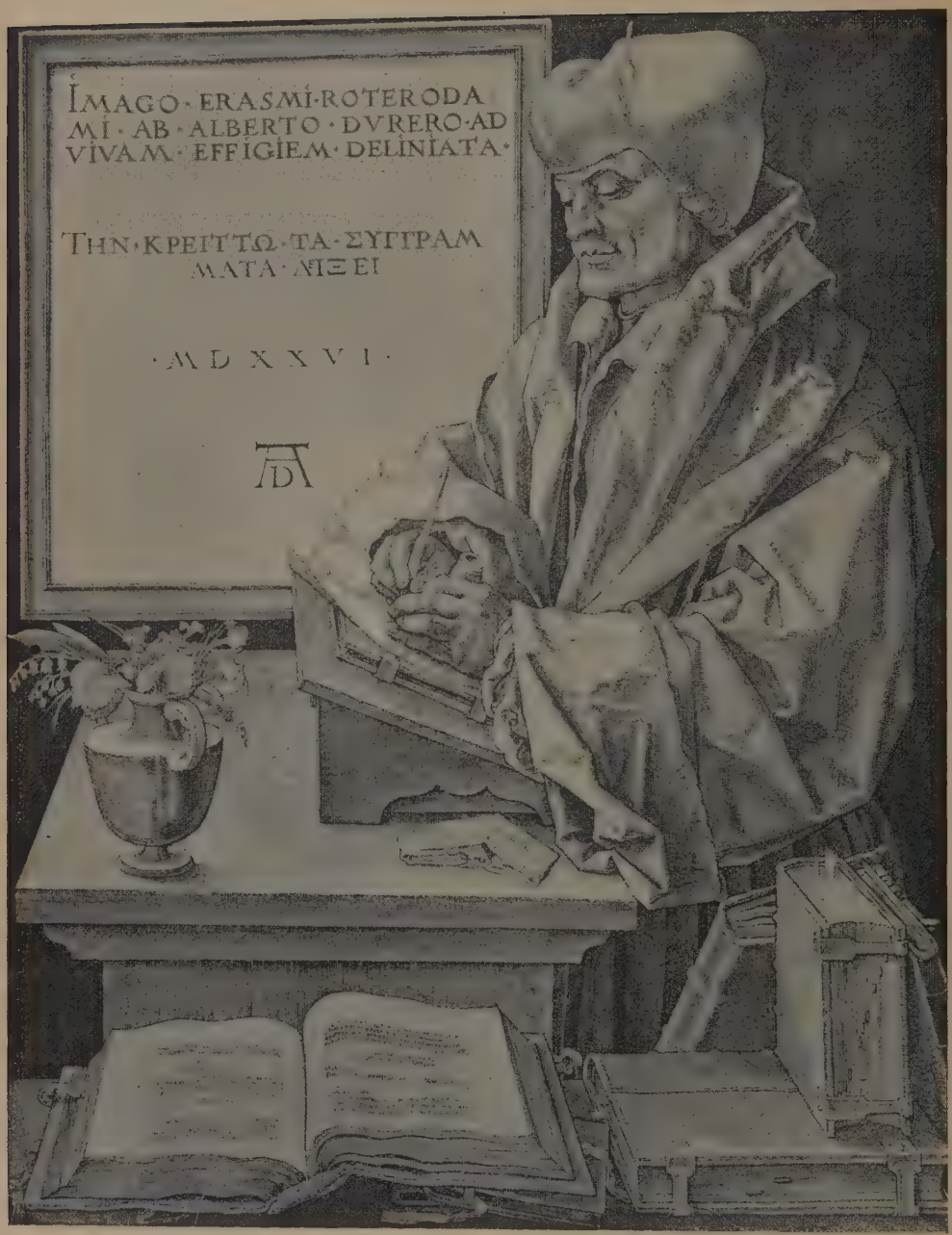
Inscription on a Roman tombstone, displaying the nobility of the "capitalis quadrata" in a decorative setting (Degering, Die Schrift).

A page from a Vth century Greek manuscript in the Library of the University, Leyden, "Vetus Testamentum Graece", comprising Genesis, Leviticus, Numbers, Deuteronomy, Joshua and Judges.

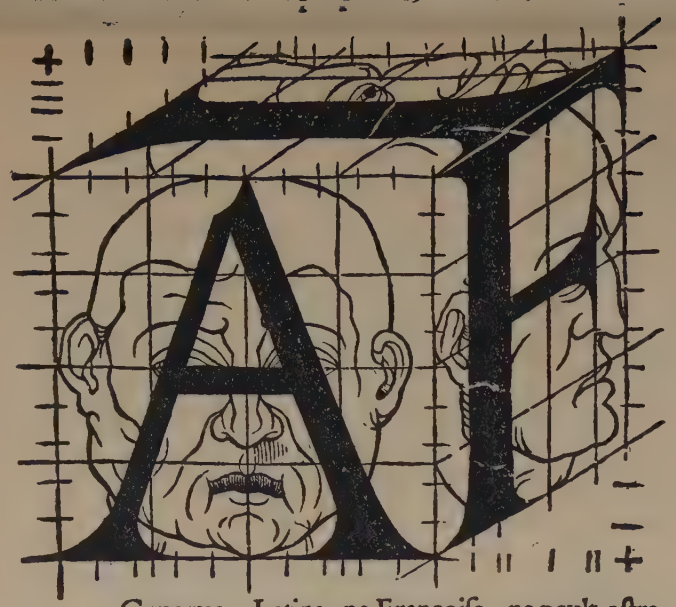


Handwriting of Thomas à Kempis, 1441. Royal Library, Brussels. The lettering, the spacing and the rhythm of both pages are unsurpassable.

From the so-called "Kinderalphabet" cut in wood bij Hans Weyditz, 1521 (Degering, Die Schrift).

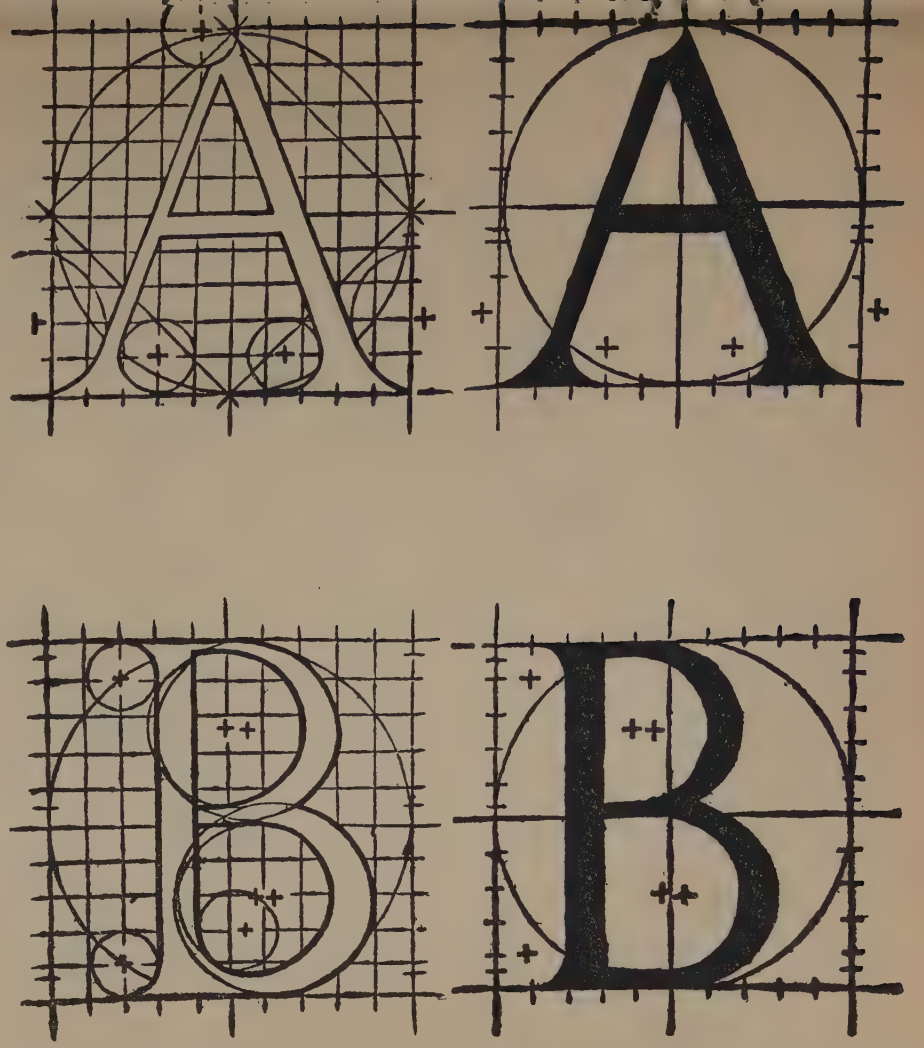


Albrecht Dürer (1471-1528) Erasmus of Rotterdam. Engraving, 1526.



Græcque . Latine , ne Françoiſe , ne peult eſtre.
A. Car en chacune ſyllabe qu'on ſçauroit dire ya
pour le moins vne vocale, Et bien ſouuent vne ſyl-
labe, pareillement vne diction, ſans aultre lettre, eſt
faicte d'une deſdictes vocales, qui ſont cinq en nó-
E. bre, c'eſt a ſçauoir. A, E, I, O, V. Exemple de A, ſeul
faiſant vne ſyllabe, Amen. Faiſant vne diction. *Ne*
I. *diſceſſeris à me.* Exemple en françois dudict A, ſeul
en ſyllabe & en diction. Acouſtuméz a bié dire &
bien faire. Exemple de le E, faiſant ſyllabe luy ſeul
& dicti on, *Etiam, eia, è regione.* Exemple en Fran-
çois quand il eſt ſeulement en ſyllabe. Eſtiene eſt
Terence. en eſmoy. Exemple de le I, faiſant ſyllabe & di-
ction. *Item. Ibo. I, Terentius in Andria, I, præ, ſequar.*

Ill. 10. Tory's construction, based on the proportions of the human face and body. From "Champ fleuri", 1549.



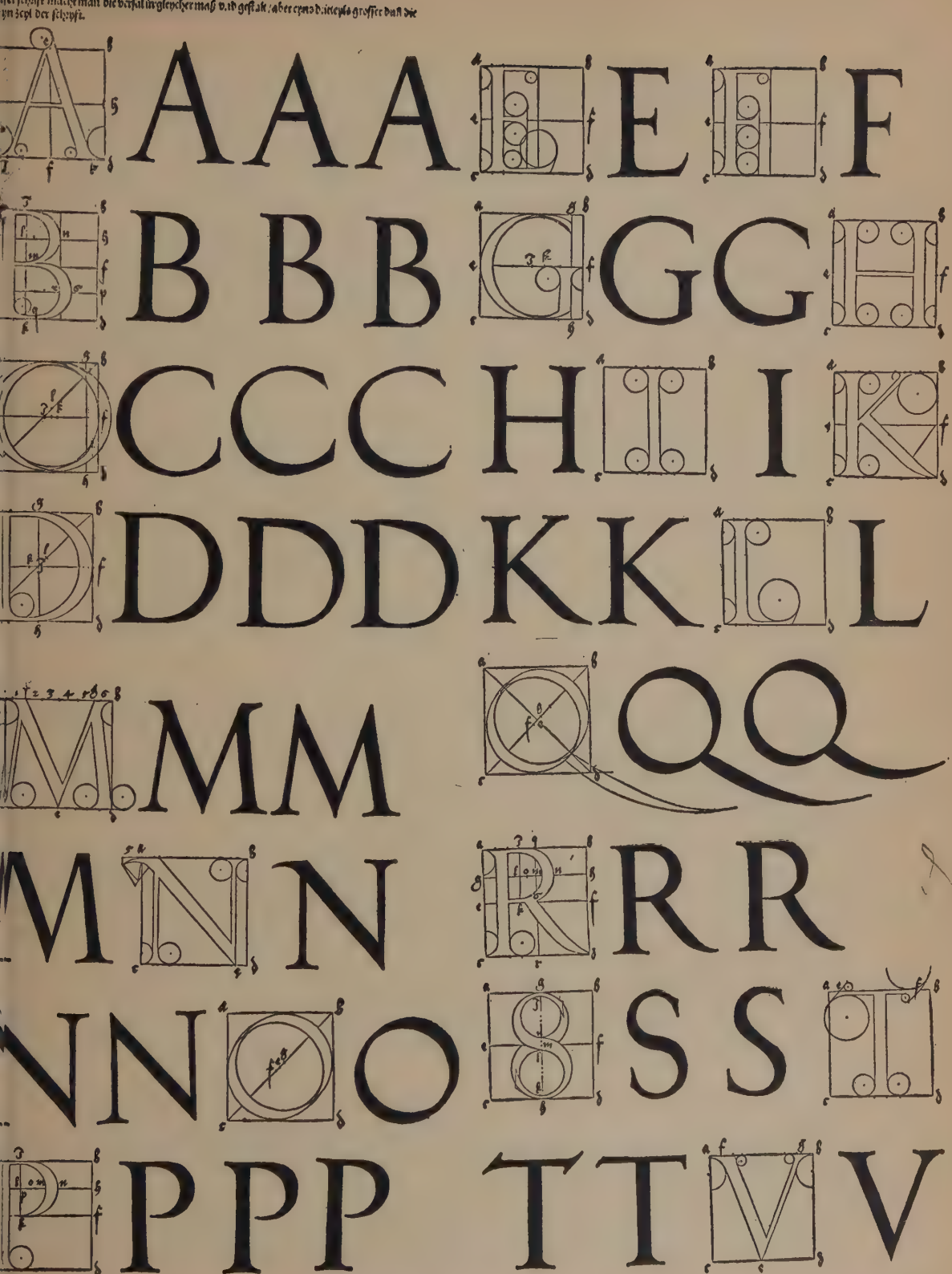
Ill. 11. Tory's construction based on Pacioli, Da Vinci and others. From his book "Champ fleuri" 1531, translated into English by Geo. B. Ives (The Grolier Club, New York, 1927.)

after these old ones. Manutius' copy of Virgil, 1501, was the first complete book to be printed in "cursivi", known in English and in French as "italics", which clearly points to the country of their origin. Gradually, roman letters superseded Gothic forms all over Europe—with the exception of Germany, where the national element proved a stronger force in its favour than elsewhere.

Fine examples of Gothic type were reproduced in Stanley Morison's *"Meisterdrucke Gothischer Schrift"*, Berlin 1931.

The beautifully coloured and ornamented capitals which in old manuscripts indicated new paragraphs were closely copied by early printers (Pl. VI) but the trained calligraphers who were now called upon to design type were aided also by theoretical works. Treatises by Roman authors, such as Vitruvius who lived in the first century B. C. and who had derived noble proportions from the human figure, were eagerly studied, and following his theories the square and the circle were taken as a basis. Sigismondo Fanti's *"Liber elementorum litterarum"*, published in 1514, was long considered to be the first printed book on the shape of letters, until L. S. Olschki of Florence discovered that this was preceded by an alphabet of 1480. Mr. Stanley Morison, to whom we owe so many interesting publications regarding fine printing, has given us a facsimile of it. Evidently this was the source, or one of the sources, from which Fra Lucca Pacioli had drawn much for his work *"Divina Proportione"*, printed in 1509. Leonardo da Vinci's writings, never printed (reproduced in facsimile later also) must have been another source to him, if we may believe the Frenchman Tory whose important book *"Champ fleuri"* was published in Paris in 1529, and was reprinted soon after. The famous wood-cutter Ugo da Carpi published his *"Thesauro de Scrittori"* in 1526. Four years earlier Ludovico degli Arrighi, named Vicentino after his birthplace, Vicenza, had printed his first book, *"Il modo de temperare le penne"*. In this he shows the *"littera cancellaresca"* (chancery letter), *"littera da brevi"* (for papal briefs), etc. Another book, *"La operina"*, followed in 1523. Mr. Morison has pointed out that Vicentino was the first to fix the form of the italic, also that used by Aldus. Albrecht Dürer, who travelled from Nuremberg to Italy and the Netherlands, where printing also flourished, wrote his *"Underweysung der Messung mit Zirckel"* in 1525, and in it gave his designs for good lettering. Three years later he published *"Vier Bücher von menschlicher Proportion"*. In 1529 Geofroy Tory, scholar bookseller, printer to the King of France, studies *"L'art et science de la deue et vraye Proportion des lettres antiques"*, *"lettres Romaines proportionnées selon le corps et le visage humain"*.

One of the finest, if not the best of all types is that by Nicolas Jenson, a Frenchman who worked in Venice (ill. 13). Between 1900 and 1916 it was revived by Emery Walker and Cobden Sanderson of



Ill. 12. Dürer's letters in the "Underweysung" 1525. By courtesy of the Victoria and Albert Museum.

the Doves Press, who closely followed it; while William Morris also based his "Golden" type on Jenson's. "I mastered the essence of it", said the master of the Kelmscott Press; and to him and the Doves Press modern book production in Holland and Germany owes much. Recently also Bruce Rogers copied it closely. A fine design, an eternal life!

In this glance at some of the sources of types we have, we hope, made clear how these excellent type faces of the early printers were built up by masters in every branch of art. Centuries of high culture are, as it were, stored in the writing of the scribes such as Jean Miélot, of scholars such as Thomas à Kempis (Pl. II), of poets like Petrarch, on whose lettering the master-printers based their printing types. Aldus

ED PHOENICVM theologiam iam per auctores
ſuos expoſuimus quam omino ut peſtiferam fugi
endam & ſanitate tantæ inſaniæ quærendã ſalutare
prædicat euangeliu: quod autem non fabulæ dictæ
ſunt aut poetarum figmenta altius quiddam quaſi
nucleum contegentia: ſed ſapientum priſcorum &

Ill. 13. Roman type by Nicolas Jenson, about 1470.

Manutius employed Raibolini, an excellent engraver and a painter of importance. A similar great artist, Giulio Campagnola, whose prints rank among the masterpieces of the print rooms on our museums, engraved Manutius' capitals when he started to print books in italics. Engravers were indispensable, because, as will be explained later, they made the punches necessary to cast type.

The proper shape of a letter is very difficult to define, but if functionalism is to be our guide we must first realize that readability depends on fine proportions of height and width. Since we read from left to right every letter requires a certain "reading-time", but this is not the same for all the different letters of our alphabet. Roughly speaking, an i, n, m take one, two, and three time-units respectively when we read them, and in connection with this width, the height should not exceed certain limits or clearness will suffer. How then do we arrive at the ideal proportions?

The Romans based their *capitalis quadrata* on the square. But this by no means implies that we should give its full width to the B, E, F, K, L, P and R, for which about one half of the square suffices. Other letters, such as M, W, Z will require that; and A, H, N, V may be put in either of these groups. By this variation in width our script obtains rhythm (see Pl. I). The circle drawn to fit our square will give the outline for

the O, Q and define the main form of C, D and G. The small letters may have ascenders slightly higher than the capitals, which otherwise tend to become too obvious in a printed page. Fine old printers usually observe this rule. Anyone who has to design letters may bear in mind that a satisfying form is given to the O by having a circle as outline; if the width becomes more than the height an objectional shape results. It is said that no less an artist than Giotto drew the circle when asked to define the true and ideal form of the O. We may add to this that the artist who follows his footsteps should bear in mind that not only the outline but also the opening encircled by each letter, is a matter of the greatest importance for a fine shape. If A and N are given the same width, the angles of the sloping lines will be different; far from being ugly this again adds rhythm to our lettering.

A division in the vertical lines is necessary in such letters as A, B, E, F, H, K, P, R. For optical reasons the top part has been made slightly smaller than the lower half. This has been the practice for centuries, but nowadays things that always have been done lose much of their attractiveness, and consequently some designers place the cross-bar extremely low on these letters.

For book work, Mr. Francis Meynell rightly remarks, it is important "that the letters will set happily together, moulding into the word". The same reaction against tradition and particularly against ornament, which we see expressed in the architecture of Le Corbusier or Frank Lloyd Wright led type-designers to leave out the serifs (the finishing strokes), horizontal on the vertical lines, and vertical on the horizontal parts of the characters. Thus we have the main form only in the so-called "grotesque" or "sans serif" type faces. But although a heading acquires a certain directness, and has, therefore, something matter-of-fact that is particularly attractive to anyone not hyper-conservative, it is an undeniable fact that a full, solid page set in "sans" is never very legible. The serifs, apart from their ornamental value, have a very important function: they bind the letters of one word together, "mould into the word", as Mr. Meynell puts it. They have no constructional function in each letter by itself, and should therefore be less heavy than the main-strokes or the letter becomes a monster (Ill. 18), but their constructional function in a word, a line and a page is evident. We will speak of this in relation to visual weight presently. Thick serifs as in Morris's "Golden" type make a page look massive.

Artists such as Dürer and Tory (Ill. 11) based the weight of the main strokes on construction, dividing the sides of the square into 8 or 10 equal parts. But though the type itself be excellent, a page will still be difficult to read if the lines are made too long in proportion to the size of each letter, for then the eye encounters difficulty in finding the proper beginning when turning from the end of one line to the beginning

of the next, either returning to the same line, or skipping one. Leading, as it is called, i.e. placing white space between the lines, will help to a certain extent; but if the type is small, long lines whether leaded or not will be found to be just as difficult to read as short ones in very large characters. In old manuscripts and early books—Gutenberg's Bible for example—we find therefore the text-matter set "solid" in close masses but in two columns, and great beauty of black and white (text and margins) is thus combined with clearness and legibility. The Greek manuscript, Plate II, is also a marvel of "balance": the size of the lettering, the distance between the lines and their width, the tone-value of the area filled with writing in comparison with the margins, form a combination of right elements which ensures beauty.

Thus we may compare good type in the hands of a printer to good bricks in the hands of an architect; the printer should have an equally delicate feeling for black-and-white values as the type designer. Plates IX to XII show us some masterpieces, composed with fine type, and well organized blank space which is of no less importance to the result obtained.

Having thus reviewed the principal general characteristics of our letters, we may devote our attention to the forms they assumed as printing types. If we leave the Gothic forms aside, we find that the basis of type faces has been constructed by the labour and intelligence of Da Vinci, Pacioli, Jenson, Tory, Arrighi, Dürer; whereas the propagation over Europe of the roman face is greatly due to such men as Manutius of Venice and Tory of Paris, whose book *"Champ fleuri"*, writes that authority, Charles Mortet, won France for the roman letter. French designers, engravers and printers came to or influenced the Netherlands, and from these regions Britain obtained its type and design (until Caslon started his foundry in the 18th century). America owes her debt to Britain for similar service.

Prof. Gustave Cohen published Tory's *"Champ fleuri"* in facsimile in 1931, thus making that interesting book accessible to many. The original copies, from which we reproduce some plates, are collectors' treasures. We no longer may accept Tory's theories as theories, but nevertheless his designs are masterly. No doubt, he owes much to Pacioli, however annoyed he is with this "frate" for borrowing from Da Vinci. He may be a little far-fetched to modern feeling, demanding no less than "Apollo, Urania, Calliope, Polymnia, Melpomene, Clio, Erato, Terpsicore, Euterpe and Thalia", and all these only for his vertical lines; he may be forcing his form upon a human head (ill. 10) and so forth, but we must bear in mind that we then find ourselves confronted with the spirit of the age, reviving *à tort et à travers* antique measurements. Tory also designed a semi-gothic type, which he called *"Lettre Batarde"*, the formal roman being known as *"Lettres Latines"* or *"Lettres de forme"*, and if of smaller size,

Ill. 14. Printer's device of Poncet le Preux, woodcut. Paris, about 1500.

Dubbelde Auguſtijn Kapitalen.

ABCDEFGHIK
LMNOPQTRU
JVWXYZÆ,.J:;

Dubbelde Mediaen Kapitalen.

ABCDEFGHIKLM
NOPRSTVXYZ

Dubbelde Deſcendiaen Kapitalen.

ABCDEFGHIKLMNO
PRSTVXYZ

Kleene Kanon Romeyn.

Idem in ſeipſum excru-
ciante! Æjace Neſcius
quod ſis, & h ſapis. Sum
ÂBCDGHJMV̂ ABCGD
KLMNOPęç;! fl *

Ill. 15. Van Dijck's roman type. From Elsevier's Specimen Sheet of the sale of Daniel Elsevier's foundry, 1681.

Ill. 16. Printer's device of Josse Bade Ascencius (woodcut showing the early hand press). Paris, about 1500.

"Lettres de somme". The king, Francis I, was vividly interested in the new art, and made Tory publish *"Le Sacre et Coronnement de la Royne"*, which shows the fine, so-called Garamond type still held in great esteem by such present day typefounders as Deberny-Peignot of Paris (see Appendix) and others of similar importance. "The Garamonds" give crispness as well as mellowness to the books which are printed with them", writes an excellent expert, B. H. Newdigate. It is interesting to add that recent research by Paul Beaujon (Mrs. Beatrice Warde) has proved that this letter was not cut by the famous engraver Garamond, but by Jean Jannon, whereas the "Granjon" type was actually engraved by Claude Garamond. It has often been said that Garamond was Tory's pupil.

In any case their close collaboration is certain, but Jacques Mégret has rightly pointed out that an inscription of 1684, and dating therefore a century and a half after Tory's death, cannot be regarded as a definite proof of such a relationship between the two great artists. That Tory's construction is guided by feeling may be clearly seen when his A (ill. 10—11) is examined closely. Having larger circles at the outside than at the inside at the foot of both the upstrokes and the downstrokes is quite right, but purely a matter of feeling. It makes the letter stand on its feet in a natural way, and it would become immediately wrong if Tory had placed his circles the other way about. This would remind us of a man standing with his feet turned towards one another. The only veritable "constructional" design would have been to make the four circles of *equal* size.

An important matter is the relation in visual weight of the main-strokes, the hairstrokes, and the serifs. The greatest weight should not be given to the latter two, but only to the first of these three components, Apart from the fact that one should not have letters shaded, as they do not represent anything three-dimensional but are quite abstract tokens, it is an error to adhere too much to forms which are satisfying in hand-writing. What looks all right in ill. 3, a reproduction of the Roman written rustica, becomes objectionable in type which, being so much more "stand-ardized", lays greater stress on certain details. Type is so much more mechanical and less lively than script, that the unavoidably rectangular serifs become just as unnatural as the irregularly written ones have charm.

If the serifs have the same weight as the strokes a certain solidity is suggested; "Beton" seems a well-chosen name for this reason for the type which has this characteristic (see Appendix). If serifs and strokes have the same weight, or tonal value, a certain dullness ensues, which should be counterbalanced by careful design, lest the military regularity makes the printed page lifeless. Again, as in the case of the sans-serif faces, what suits a heading or display line, does not necessarily suit a page set solid. The greatest contrast between thick and thin may be seen

in the French "Didot" type (see Appendix), whereas it is absent in the "sans" faces, which had been preceded by the "grotesques", such as William Thorne's in the beginning of the 19th century.

"There seems no practical reason why printing should continue to be based on penmanship", says Graily Hewitt rightly, "but the fact remains that types are unsuccessful which disdain the connection, so bound by custom are our notions about legibility". It is indeed just a matter of a certain percentage of dependency and a certain percentage of independence.

A universally admired letter was cut for the 17th century Dutch Elsevier Press by Christopher van Dyck (ill. 15), where a happy equilibrium was found between these two elements of historical logic and invention. It was evolved from Roman and Geofroy Tory's principles. These letters stood unrivalled in Holland and England, and became Caslon's models.

Gradually the heaviness of the old "black" gothic letter—equal in weight to the woodcut—was departed from. As typefounders perfecting their craft produced smaller types, a greater delicacy came within their reach. And the letters of the Elseviers so improved on older French ones in this respect that the legend arose that they printed from silver instead of lead as other printers did.

The fame of the Elseviers rests to a great extent on their type cutter Van Dijck, who lived from 1601 to 1672. He based his type forms on the Aldine roman; the sixteenth century created the types which we know by the term "old-face", and his are the finest of the kind. The Elseviers were good publishers, first-class booksellers, their books spread rapidly over Europe, and with their publications their type became popular, or vice-versa.

English printing in those days "remained in its infancy thanks to the repressive legislation of the Crown. In Moxon's time it was the custom to commend a book by remarking that it was printed in Dutch letter", writes Stanley Morison. Again, if we may quote the same authority once more, "When in 1660 Bishop Fell took in hand the task of procuring types for the use of the Clarendon Press, Oxford, he immediately turned to Holland. His agent, Thomas Marshall procured punches and matrices from the Voskens (skilful engravers and type cutters) but unfortunately he secured none of the work of Christopher van Dijck. This is infinitely regrettable", he continues, "because of a too thorough reformation undertaken later."

In 17th century France Grandjean cut *"le romain du roi Louis XIV"*. Fournier in the 18th followed with fine designs, and copied some made in Holland by Fleischman, who worked for the Enschedé foundry at Haarlem.

In France, owing to the development of the art of engraving on

Mooie boeken te schrijven is moeielijk.

Mooi te schrijven met een PERRY-PEN
is gemakkelijk.

Winterdagen
kaart...f1.00
GOEDKOOP
"SWAN"
FOUNTPENS
schoen

Ill. 17. Three specimens of the Pre-Morris style, equally remarkable for the shape of the letters and for their "placing". Left, A.D. 1890. Right, A.D. 1934 (!). Centre, wrong use of type.

Landsdrukkerij

TYPOGRAPHIE

Ill. 18. A type face ("Italienne") with serifs which would carry an elephant. Wrongly derived from Roman script shown in ill. 3.

Fabrikanten van Geschept Papier

voor Effecten, Aandeelen, Wisselformulieren

en ander geldswaardig papier.

Schrijfpapier voor Registers of Kantoorboeken,

DRUKPAPIER VOOR PRACHTUITGAVEN,

Postpapier en Enveloppen, Cartons,

TEEKENPAPIER, wit en in verschillende kleuren (Papier Ingres),

EN VAN

Machinaal Papier

VOOR ROTATIE- EN GEWOON DRUK,

gesatineerd en ongesatineerd

Eenzijdig glad Cellulose en Zakkenpapier.

PAKPAPIER, geglansd en ongeglansd,

IN ROLLEN EN VELLEN

Ill. 19. A medley of type faces aiming at liveliness and producing chaos. Pre-Morris style, 1890, in Holland.

Actiengesellschaft für Schriftgiesserei und Maschinenbau

Offenbach am Main

Gegründet 1840.

Telegr.-Adresse: Type, Offenbachmain.

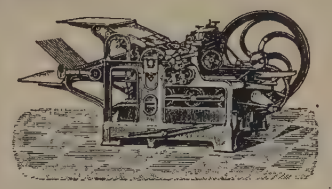
Wir empfehlen unsere grosse Auswahl in

Brod-, Titel-, Zier- und Schreib-Schriften

Modernes Accidenzmaterial, Einfassungen, Vignetten, Politypen etc.

Komplete Einrichtungen sind beständig auf Lager und können sofort geliefert werden.

Probenblätter bitten zu verlangen.



Buchdruck-Schnellpressen

Einfache Schnellpressen
mit 55/80, 60/90, 72/110, 90/130 cm Druckfläche.

Neue Accidenz-Maschinen
mit 39/55, 43/60, 46/64, 50/70 cm Druckfl.

Einfache Schnellpresse ‚Hassia'
mit 54/78 cm Druckfläche.

Neue Cylinder-Tretmaschinen
mit Eisenbahnbewegung, für Hand- u. Fussbetrieb mit 54/78 cm Druckfläche.

Neue Cylinder-Tretmaschinen
mit Rollenbewegung, für Hand- u. Fussbetrieb mit 45/65, 50/70, 54/78 cm Druckfläche.

Verbesserte Tiegeldruckpressen
mit 30/42 und 35/48 cm Tiegelgrösse.

Tiegeldruckpresse ‚Franklin'
mit 30/42 und 35/48 cm Tiegelgrösse.

Verbesserte Boston-Pressen.
mit 335/450, 267/387, 256/358, 173/247 mm Tiegelgrösse.

Ausführliche Prospekte sowie Zeugnisse stehen auf Wunsch gratis und franko zu Diensten.

Kulante Zahlungsbedingungen.

Ill. 20. The Pre-Morris style, 1890, in Germany.

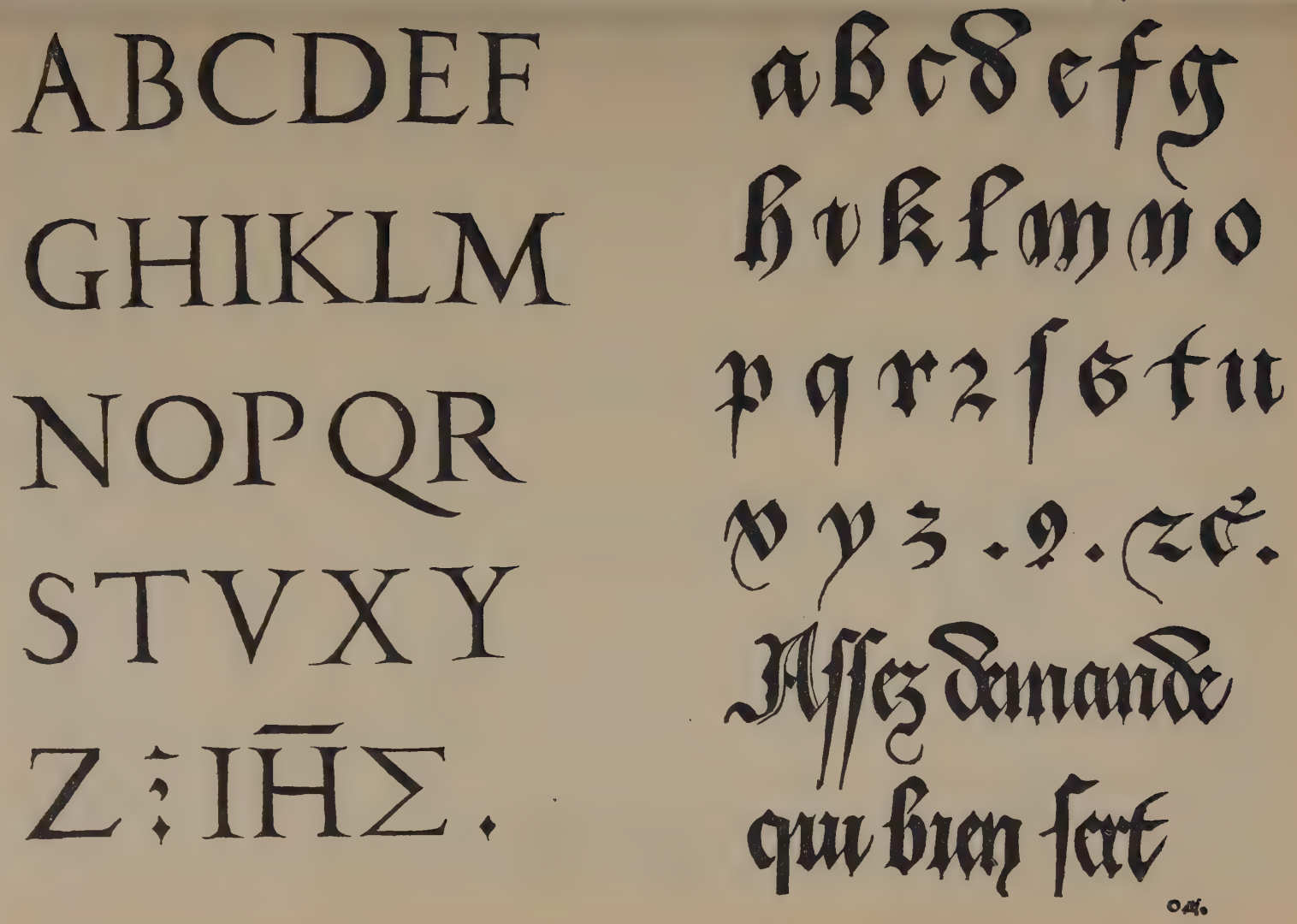
copper in the 17th and 18th centuries, a greater delicacy, corresponding to the thin engraved lines, came into fashion. The engraver cuts the finest lines imaginable into his copper plate, and instead of having the lettering set in type, the custom of adorning title pages with such prints led to engraving the lettering on the same copper also. This characteristically "engraved" aspect, found already in Dürer's portrait of Erasmus (Pl. IV) developed into the type (called after the engraver Nicholas Cochin) with long, elegant ascenders, shown in our Appendix in the pages of the Deberny-Peignot foundry. The freedom obtained by the graver led sometimes to decorative but over-ornamented title pages (Pl. XIV).

England followed the Dutch examples till William Caslon I designed a modification of these between 1720 and 1726. "Why are William Caslon's types so excellent and so famous?" asks Mr. D. B. Updike in his treatise on "*Printing Types*", and he replies: "That is, I think, their secret —a perfection of the whole, derived from harmonious but not necessarily perfect individual letter-forms. He knew how to make types, if ever a man did, that were (to quote once more M. Bernard's phrase) 'friendly to the eye', or 'comfortable'—to use Dibdin's happy term. Lacking a 'national' form of letter, we in America (who are mainly governed by English printing traditions) have nothing better."

Perhaps Mr. Updike's question is answered best by a term, applied to Caslon's lettering by Mr. Morison: —"a happy archaism ensured them their great success", he says, "owing to the conservative temper of the country". Being a Britisher himself, Mr. Morison has a right to say so. The Caslon foundry, a firm still enjoying world-wide recognition, has had the greatest influence on English and American printing because of this Anglo-Saxon characteristic.

"This new Foundery was begun in the Year 1720 and finished 1763, and will (with God's leave) be carried on, improved, and inlarged, by William Caslon and Son", states the Colophon of the 1764 Specimen Book of the firm, where a woodcut represents the house in Chiswell Street. In the Appendix Caslon's Roman is being shown to advantage, whilst the black letter may be seen in ill. 23, and a page of various types in ill. 24. The beautiful Pica "Black" was cut about 1733; the roman was produced in 1722. The 1734 specimen-sheet, which exhibited the results of fourteen years of labour, includes the English Syriac and a pica Samaritan, cut by Dummers, a Dutchman. William Caslon II was born in 1720, William III (1754—1833) disposed of his interest to his mother and the widow of his brother Henry; her son was Henry (1786—1850), the last Caslon was Henry William (1814—1874). The business was taken over by the manager, whose sons ultimately assumed the name of Caslon, the foundry remaining in their hands to-day.

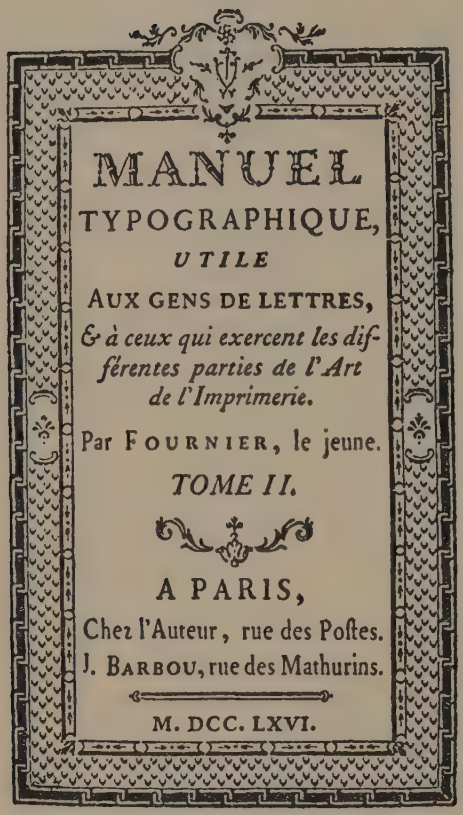
In 1734 Caslon took a Cicero text, one of his speeches against Cata-



Ill. 21. Tory's Latin and Semi-Gothic alphabets. From "Champ fleuri", 1531.

lina, employing it as a means to demonstrate his letter; and since all typefounders abuse our patience, echoing his "Quosque tandem abutere, Catalina, patientia nostra".

Another Englishman, Baskerville, became Caslon's rival. We will


MANUEL
TYPOGRAPHIQUE,
UTILE
AUX GENS DE LETTRES,
& à ceux qui exercent les différentes parties de l'Art de l'Imprimerie.
Par FOURNIER, le jeune.
TOME II.
A PARIS,
Chez l'Auteur, rue des Postes.
J. BARBOU, rue des Mathurins.
M. DCC. LXVI.

Ill. 22. Title page, self size, by S. P. Fournier, 1766.

FREGI
E
MAJUSCOLE
INCISE E FUSE
DA
GIAMBATTISTA
BODONI
DIRETTORE
DELLA STAMPERIA REALE
A PARMA
NELLA STAMPERIA STESSA
1771

Ill. 22a. Title page. self size, by G. B. Bodoni, 1771.

speak again of him later, as we must draw attention to his work as a printer and typographer as well. His Elsevier-variation may be seen on Plate XVIII.

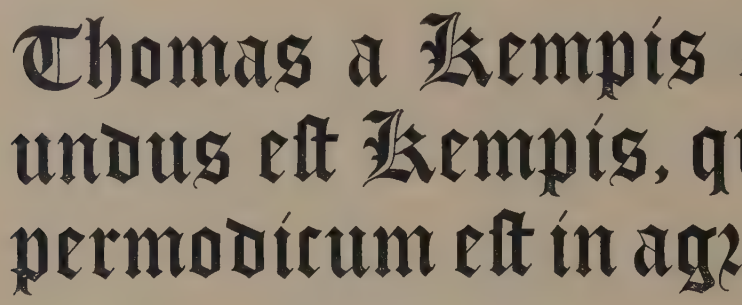
We have not yet mentioned a very interesting, though to us not very legible, kind of type called *"caractère de civilité"*. It was based on 16th century handwriting and cut by Robert Granjon of Lyons. Granjon called it *"lettre françoise d'art à main"*; and although he obtained a patent, it was copied elsewhere. In 1559 a translation of Erasmus was printed with this type at Antwerp, *"La civilité puérile distribuée par petitz chapitres*

et sommaires", and although Granjon also cut *„lettres façon d'escriture"* for the Antwerp printer Plantin, the name *"civilité"* was for ever given to this remarkable letter. The Haarlem typefoundry Enschedé possesses six various fonts of this type, one of which will be seen among our Appendix-pages, printed by this firm; the others are a fine Gothic of old Netherlandish origin, attributed to the punchcutter Henricx, and dating from about 1490, and a roman, attributed to Schoeffer, Gutenberg's helper and, later, rival. All old typefoundries were in the course of time taken over by the Enschedé's, whose *"Collection typographique"* is, therefore, of the greatest value to the history of printing. Prof. M. Sabbe, of Antwerp, and Marius Audin devoted an essay to *"Les caractères de Civilité"*, published in 1921 (Antwerp-Lyons). It is interesting to compare this type with Plate XVII.

The style of baroque and rococo in 18th century France made itself felt in all forms of decorative art, and did not pass the domain of the printer and punchcutter unheeded.

In Fournier's work (ill. 22) we have a specimen of it, but it is shown to fuller advantage in Plate XIV. All over Europe a reaction against the exaggeration of ornament arose, Bodoni, the Italian master who began by being influenced by it (ill. 22 a), became one of its strongest opponents. Baskerville, in a country where the "old face" had not given way to such a degree, had shown what plain but well-devised lettering could be; and Bodoni in Italy and Didot in France led the way in a revival of classic soberness. Also Ibarra in Spain worked on the same principles (Pl. XIII), but Didot and Bodoni especially should concern us here, as they designed a letter in which these principles were expressed more strongly. S. P. Fournier, called "le jeune", born in 1712, had compiled a *"Manual typographique"* which was re-edited by Harry Carter (The Soncino Press, London 1930), and published under the title of "Fournier on Typefounding". Fournier was the first to attempt the form we now call "modern face". His brother, J. P. Fournier, bought the Le Bé foundry; but both men's types were lost in the French revolution. In Didot and Bodoni the architectural side of the shape of our letters is brought to the fore with great enthusiasm, and this is the reason that they are so extremely up-to-date still. The main characteristics of their productions are that the upstrokes and serifs are extremely thin, and the latter are at right angles with the former, without the slightest softening of the angles by curves. This angular character and the thin, flat serif, were foreshadowed, as Mr. Morison has pointed out, two hundred and fifty years before Bodoni was born, among others in an interesting manuscript, written in 1519 for Francis I of France by a Dutch scribe, Godofredus. But this does not do away with the fact that Bodoni and Didot were the men who introduced these characteristics in print, and made them predominant in their books for the first time, and are, therefore,

rightly considered the innovators. Morris and Emery Walker, evidently not realizing that they were only reviving another old form of lettering which suited their personal taste better, or perhaps because of that, could not appreciate the "modern face".



Ill. 23. Caslon Gothic, 1935.

Meanwhile the 19th century had brought the deluge of bad taste already mentioned and, in a few instances, illustrated in the foregoing pages. Letters, amorphous as collapsed *soufflés*, or aping rustic wood, Japanese bamboo, or Egyptian architectural forms became passing fashions; and the weirdest deformities resulted from our so-called progress.

William Morris was the man whose name will live for ever because he fought against this degeneration with the utmost energy. If his work was not a basis for modern printing itself, the intrinsic value of it—his re-discovery of the sound principles which are underlying values in every form of endeavour in the field of lettering and print—opened the eyes of others, even if they became his opponents, because they could not follow his revival of old art. Later printers, both in England and abroad, turned to something new they had thought out for themselves, often something anti-Morris, yet the dynamic urge came from Kelmscott. Thus the Swiss type-designer Grasset rightly described the Morris-movement as barren in so far as it was archaic. Once machines and apparatus are there, one cannot go back to a pre-machine age as if they had not been invented. The impossibility of this was felt by Morris himself. Intending to produce a beautiful book, he succeeded. But in making it a treasure, which only the happy few could acquire, he failed, because his noble, democratic intentions were to bring beauty and fine craftmanship to the many. Nevertheless, beautiful his books are in their own way! He designed the three well-known types; the "Golden", in which Caxton's Golden Legend, the old *Légendes dorées*, was reprinted (1890), modelled after Jenson's roman of 1476; the "Troy" type, employed to reprint Caxton's "*Recuyell of the Historyes of Troye*", which came from the press on November 24th, 1892; and the "Chaucer", only different from the "Troy" in size. It has been rightly remarked that if the Golden

OOSTERSCH

DE DAUW HANGT PARELEN aan takken en aan blaren
in kettingen en snoeren;
de kusmond van den wind, als hij ze aan wil roeren,
doet ze ontstellen, sidderen zonder bedaren
en stort ze allen neer, de wankelbaren.

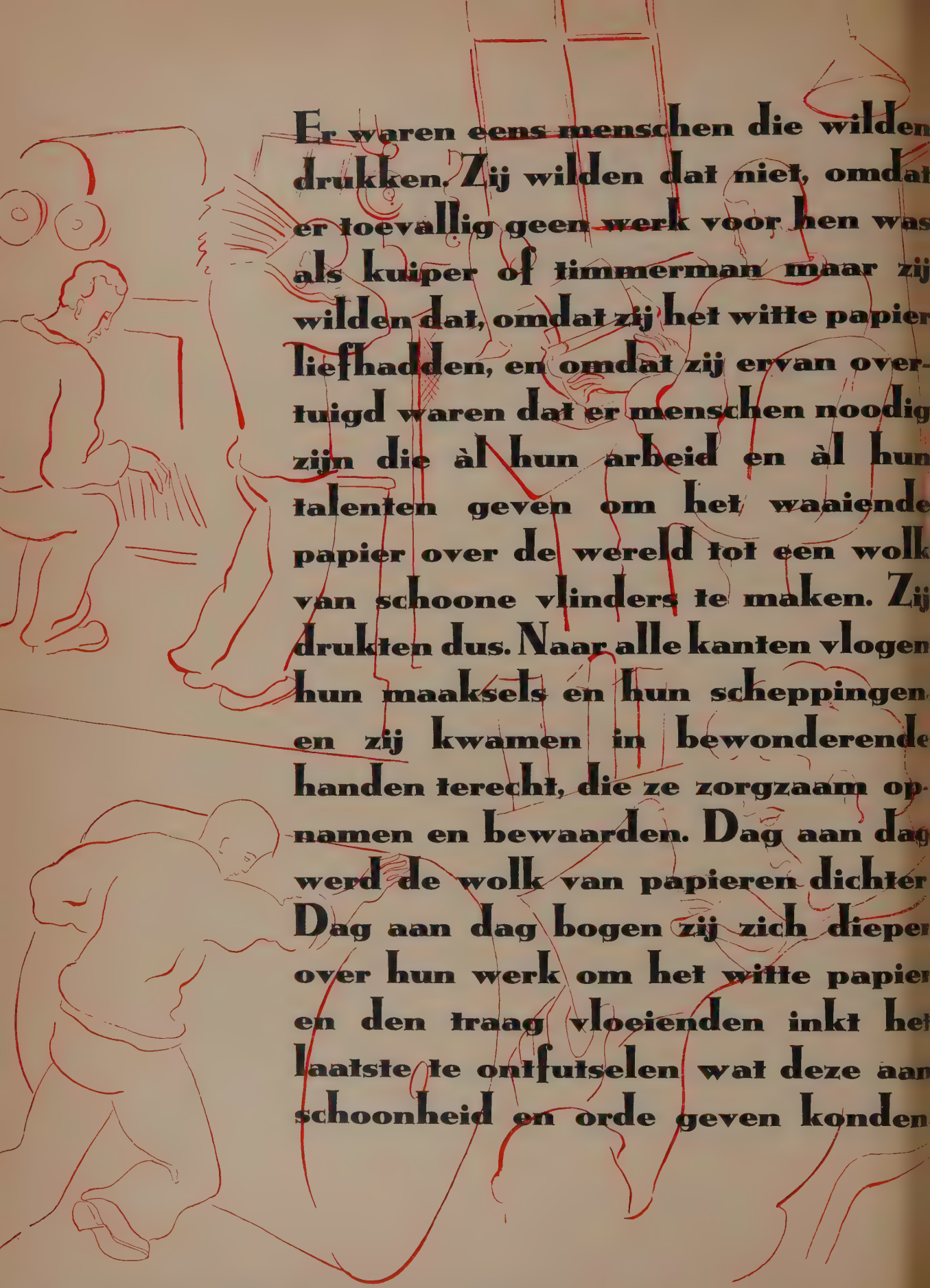
De beek is een velijnen blad,
een boek, een open letterschat,
een gulden labyrinth, waarin
de vogels komen lezen, dat
de wind beschrijft,
de wolk, die overdrijft,
zet er de stippen en de titteltеekens in.

Mijn boom heeft kweeën tegen oogst,
dat glanzend was en honingzoet,
De top is over en het pad
ligt afwaarts voerend voor mijn voet.

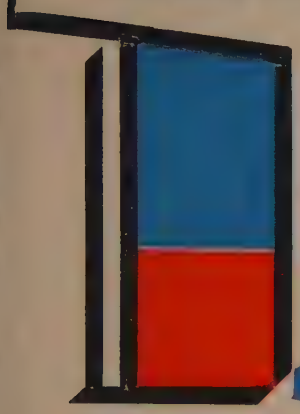
Gedronken is wat van den wijn
de klare opperbloesem is,
Er rest mij nu nog ééne slok,
een slok, die niets dan droesem is.

A page from „Oostersch", poems after Persian and Arabian poets by J. H. Leopold, printed in 60 copies by J. F. van Royen, the Kunera Press, The Hague, 1925. The type was designed by Lucien Pissarro. This reproduction was printed by the Lumax Printing Works, Utrecht, Holland

hotex 122 Grms sq.m.
Amsterdam


Er waren eens menschen die wilden
drukken. Zij wilden dat niet, omdat
er toevallig geen werk voor hen was
als kuiper of timmerman maar zij
wilden dat, omdat zij het witte papier
liefhadden, en omdat zij ervan over-
tuigd waren dat er menschen noodig
zijn die àl hun arbeid en àl hun
talenten geven om het waaiende
papier over de wereld tot een wolk
van schoone vlinders te maken. Zij
drukten dus. Naar alle kanten vlogen
hun maaksels en hun scheppingen
en zij kwamen in bewonderende
handen terecht, die ze zorgzaam op-
namen en bewaarden. Dag aan dag
werd de wolk van papieren dichter
Dag aan dag bogen zij zich dieper
over hun werk om het witte papier
en den traag vloeienden inkt het
laatste te ontfutselen wat deze aan
schoonheid en orde geven konden

A page from „Geluk in druk", lay-out by A. M. Oosterbaan, printed by Lumax Printing Works, Utrecht, Holland.



Der Mensch, wissen wir, ist weder ausschließend Materie noch ister ausschließend Geist. Die Schönheit, als Consummation seiner Menschheit, kann also weder ausschließend bloßes Leben sein, wie von scharfsinnigen Beobachtern, die sich zu genau an die Zeugnisse der Erfahrung hielten, behauptet worden ist, und wozu der Geschmack der Zeit sie gern herabziehen möchte; noch kann sie ausschließend bloße Gestalt sein, wie von spekulativen Weltweisen, die sich zu weit von der Erfahrung entfernten, und von philosophierenden Künstlern, die sich in Erklärung derselben allzusehr durch das

Friedrich von Schiller, Von der Erziehung des Menschengeschlechts
Gothic "Maximilian" designed by Rudolf Koch (1914-17). Lay-ou
by Haag-Drugulin, Leipzic. Lumax Printing Works, Utrecht, Holland

Estrangelo, Syria, derived from Asiatic writing (Persian, Mongolian, etc.). Ornamental border, Monotype Corp. Lay-out by Haag-Drugulin, Leipzic. Lumax Printing Works, Utrecht, Holland.

ΠΛΑΤΩΝΟΣ ΣΥΜΠΟΣΙΟΝ

ΑΠΟΛΛΟΔΩΡΟΣ. ΔΟΚΩ ΜΟΙ ΠΕΡΙ ΩΝ ΠΥΝΘΑΝΕΣΘΕ ΟΥΚ ΑΜΕΛΕΤΗΤΟΣ ΕΙΝΑΙ. ΚΑΙ ΓΑΡ ΕΤΥΓΧΑΝΟΝ ΠΡΩΙΗΝ ΕΙΣ ΑΣΤΥ ΟΙΚΟΘΕΝ ΑΝΙΩΝ ΦΑΛΗΡΟΘΕΝ· ΤΩΝ ΟΥΝ ΓΝΩΡΙΜΩΝ ΤΙΣ ΟΠΙΣΘΕΝ ΚΑΤΙΔΩΝ ΜΕ ΠΟΡΡΩΘΕΝ ΕΚΑΛΕΣΕ, ΚΑΙ ΠΑΙΖΩΝ ΑΜΑ ΤΗΙ ΚΛΗΣΕΙ Ω ΦΑΛΗΡΕΥΣ, ΕΦΗ, ΟΥΤΟΣ ΑΠΟΛΛΟΔΩΡΟΣ, ΟΥ ΠΕΡΙΜΕΝΕΙΣ; ΚΑΓΩ ΕΠΙΣΤΑΣ ΠΕΡΙΕΜΕΙΝΑ· ΚΑΙ ΟΣ, ΑΠΟΛΛΟΔΩΡΕ, ΕΦΗ, ΚΑΙ ΜΗΝ ΚΑΙ ΕΝΑΡΧΟΣ ΣΕ ΕΖΗΤΟΥΝ ΒΟΥΛΟΜΕΝΟΣ ΔΙΑΠΥΘΕΣΘΑΙ ΤΗΝ ΑΓΑΘΩΝΟΣ ΣΥΝΟΥΣΙΑΝ ΚΑΙ ΣΩΚΡΑΤΟΥΣ ΚΑΙ ΑΛΚΙΒΙΑΔΟΥ ΚΑΙ ΤΩΝ ΑΛΛΩΝ ΤΩΝ ΤΟΤΕ ΕΝ ΤΩΙ ΣΥΝΔΕΙΠΝΩΙ ΠΑΡΑΓΕΝΟΜΕΝΩΝ, ΠΕΡΙ ΤΩΝ ΕΡΩΤΙΚΩΝ ΛΟΓΩΝ, ΤΙΝΕΣ ΗΣΑΝ. ΑΛΛΟΣ ΓΑΡ ΤΙΣ ΜΟΙ ΔΙΗΓΕΙΤΟ ΑΚΗΚΟΩΣ ΦΟΙΝΙΚΟΣ ΤΟΥ ΦΙΛΙΠΠΟΥ, ΕΦΗ ΔΕ ΚΑΙ ΣΕ ΕΙΔΕΝΑΙ. ΑΛΛΑ ΓΑΡ ΟΥΔΕΝ ΕΙΧΕ ΣΑΦΕΣ ΛΕΓΕΙΝ· ΣΥ ΟΥΝ ΜΟΙ ΔΙΗΓΗΣΑΙ· ΔΙΚΑΙΟΤΑΤΟΣ ΓΑΡ ΕΙ ΤΟΥΣ ΤΟΥ ΕΤΑΙΡΟΥ ΛΟΓΟΥΣ ΑΠΑΓΓΕΛΛΕΙΝ. ΠΡΟΤΕΡΟΝ ΔΕ ΜΟΙ, Η Δ'ΟΣ, ΕΙΠΕ, ΣΥ ΑΥΤΟΣ ΠΑΡΕΓΕΝΟΥ ΤΗΙ ΣΥΝΟΥΣΙΑΙ ΤΑΥΤΗΙ Η ΟΥ; ΚΑΓΩ ΕΙΠΟΝ ΟΤΙ ΠΑΝΤΑΠΑΣΙΝ ΕΟΙΚΕ ΣΟΙ ΟΥΔΕΝ ΔΙΗΓΕΙΣΘΑΙ ΣΑΦΕΣ Ο ΔΙΗΓΟΥΜΕΝΟΣ, ΕΙ ΝΕΩΣΤΙ ΗΓΕΙ ΤΗΝ ΣΥΝΟΥΣΙΑΝ ΓΕΓΟΝΕΝΑΙ ΤΑΥΤΗΝ ΗΝ ΕΡΩΤΑΣ, ΩΣΤΕ ΚΑΙ ΕΜΕ ΠΑΡΑΓΕ-

Plato. Greek uncial based on the Codex Alexandrinus, (Vth centu manuscript) designed by C. Ae. F. Tischendorf. Lay-out by Hac Drugulin, Leipzic. Lumax Printing Works, Utrecht, Holland.

FELIX TIMMERMANS

Die Delphine

Eine Geschichte aus der guten alten Zeit

Mit vielen Zeichnungen des Dichters

Viel Seltsames und Vergnügliches weiß Timmermans von den Stammgästen des Gasthofes „Zum Delphin", von den „Philosophen von Lier" zu berichten, — von ihrer Liebe und Kunst, ihren Narrheiten und Leidenschaften

Im Insel-Verlag zu Leipzig

ok-jacket for the Insel-Verlag. Gothic „Fraktur"-type, based on igns by the Luthersche Schriftgiesserei, about 1650. Lay-out by ıag-Drugulin, Leipzic. Lumax Printing Works, Utrecht, Holland.

CASLON

William Caslon was born in Shropshire in 1692, and was apprenticed to a London engraver of gun-stocks, binders' ornaments, etc. In the course of his business Caslon became acquainted with James the typefounder, and Bowyer the printer, and at their suggestion he made his first essay in type designing and cutting. It was in the year 1720 that he turned seriously to type-founding. He cut during the following six years several sizes of the magnificent roman and italic letter which now bears his name. It was time, indeed, that a native genius should attempt the much needed improvement in the appearance of English printing since the market had for very long been dependent upon foreign-made types of which only the more inferior reached our printers. The success of William Caslon's letter was

Some lines from Stanley Morison, On Type Faces. Set up in Caslo roman. Lay-out and printed by the Lumax Printing Works, Utrec Holland.

Lo Inferno
i. 1—42

COMINCIA LA COMMEDIA DI DANTE NELLA QUALE TRATTA DELLE PENE DE' VIZII & DE' PREMII DELLE VIRTU. CANTICA PRIMA APPELLATA INFERNO. CANTO PRIMO NEL QUALE SI PROEMIA A TUTTA L'OPERA.

NEL MEZZO
DEL CAMMIN DI NOSTRA VITA
Mi ritrovai per una selva oscura,
Che la diritta via era smarrita.
E quanto a dir qual era è cosa dura
Questa selva selvaggia ed aspra e forte,
Che nel pensier rinnuova la paura!
Tanto è amara, che poco è più morte:
Ma per trattar del ben ch'i' vi trovai,
Dirò dell'altre cose ch'io v'ho scorte.
I' non so ben ridir com'io v'entrai;
Tant'era pien di sonno in su quel punto,
Che la verace via abbandonai.
Ma poi ch'io fui al piè d'un colle giunto,
Là dove terminava quella valle
Che m'avea di paura il cor compunto,

Guardai in alto, & vidi le sue spalle
Vestite già de' raggi del pianeta
Che mena dritto altrui per ogni calle.
Allor fu la paura un poco queta
Che nel lago del cor m'era durata
La notte ch'i' passai con tanta pieta.
E come quei che con lena affannata
Uscito fuor del pelago alla riva,
Si volge all'acqua perigliosa e guata;
Così l'animo mio che ancor fuggiva,
Si volse indietro a rimirar lo passo,
Che non lasciò giammai persona viva.
Poi ch'ei posato un poco il corpo lasso,
Ripresi via per la piaggia diserta,
Sì che il piè fermo sempre era il più basso;
Ed ecco, quasi al cominciar dell'erta,
Una lonza leggiera e presta molto,
Che di pel maculato era coperta.
E non mi si partia dinanzi al volto;
Anzi impediva tanto il mio cammino,
Ch'io fui per ritornar più volte volto.
Tempo era dal principio del mattino;
E il sol montava su con quelle stelle
Ch'eran con lui, quando l'amor divino
Mosse da prima quelle cose belle;
Sì che a bene sperar m'era cagione.
Di quella fera alla gaietta pelle,

page from Dante's „Inferno", printed in 135 copies by C. H. St J. ornby, at the Ashendene Press, London, 1902. Woodcuts after the 1481 ition by C. Keates. The type was designed by Emery Walker and Cockerell, and was based on that used by Sweynheym and Pannartz, biaco, 1465. This reproduction was printed by the Lumax Printing Vorks, Utrecht, Holland.

type had been used for the Chaucer *"Canterbury Tales"*, and the Troy type for the Golden Legend, they would have interpreted the character of these books very much better.

In France the 19th century revival is practically centred in the activities of one foundry, that of Messrs. Deberny-Peignot in Paris. Among other forms stands the font, designed by the finest of French printers, Léon Pichon and the wood-cutter Carlègle, which gives character to Mr. Pichon's fine pages of *"Les Métamorphoses"* in our Appendix. Over against this the very modern of the moderns may be welcomed in M. Cassandre's "Bifur". Pichon's "Dorique" derives its name from the form of his capital I, so shaped to resemble the Doric column of the Greeks. Here we have an endeavour to depart from the slavery of the Didot-forms, so popular in France to the present day, without going to an extreme.

An endless variety of designs can be boasted by Germany. Besides the innumerable Gothic fonts, there are so many roman alphabets that we can only draw attention to a few. Let us glance at Holland also.

To-day's printing in Germany has its roots partly in England before Morris's time. The Hamburg typefoundry, Gentzsch & Heyse, had obtained a letter from an Edinburgh firm, Messrs. Richard & Millar, which was the base of a "mediæval" character brought on the market in 1869. In this the mediæval flourishes were allowed a moderate say in the matter of type design. The ornamental versals of old manuscripts, copied by hand in the decoration of the first printed books, now made their *entrée de salon* in the world of print. Prof. Tiemann who confesses the Doves Press printing as his immediate example, designed a fine alphabet in 1909 for the Klingspor foundry (see Appendix). The "Amsterdam" Typefoundry produced one in 1912, in which these pages are set, followed by others in 1923 and 1925. All three were designed by S. H. de Roos, who reserved the "Meidoorn" for his own private press, and had provided Mr. Van Royen with the "Silver" type.

The Enschedé typefoundry, Haarlem, after having produced fonts designed by Fleischman and Rosart, has come to the fore again with the new letters by Mr. Van Krimpen, whose fine "Lutetia" (1925) is well known in England and in America, as it is available on the Monotype. His "Romanée" remains in the hands of Messrs. Enschedé only. A Greek font of his goes by the name of "Antigone". A letter cut in wood was Mr. van der Vossen's handiwork.

In recent years Germany has been most prolific in new and often daring designs. Apart from those already mentioned, Prof. Rudolf Koch's types should be praised in the first place. The outline of his "Neuland" was made by filing off the corners of metal quadrats, the opening having been produced by punching. This, and other types of his design found their way to some English and American printing offices. In London the

A Page of Caslon Types

Caslon Old Face—6-72 point

THE most popular face

Caslon Old Face Italic—6-72 point

A very Beautiful Italic

Caslon Old Face Heavy—6-72 point

In graduation of size

Caslon Old Face Heavy Italic—6-48 point

Assistance of eminent

Caslon Old Face Open—12-48 point

It retains the beautiful

Caslon Old Face Heavy Open—12-72 point

Type much in favour

Old Roman—6-48 point

Consider our selection

Old Roman Italic—6-48 point

We Excel in Originality

Titling Forum—10-36 point

CLASSIC DESIGN

Kennerley Old Style—6-48 point

May now be obtained

Kennerley Old Style Italic—6-48 point

Attractive Type Display

Kennerley Bold—6-48 point

Letter made famous

Kennerley Bold Italic—6-48 point

Kennerley Bold Italic

Kennerley Bold Compressed—6-48 point

Recommendations

Baskerville Old Style—6-48 point

Characteristics Secured

Baskerville Old Style Italic—6-48 point

Celebrated Adventurers

Le Cochin—6-14 point

The Art adopted by the many

Le Cochin Italic—7-14 point

In the various markets of the world

Cochin Open—14-30 point

Every modern requisite for

Bodoni—6-48 point

Periodical Investments

Bodoni Italic—6-48 point

Excellent Business Deal

Cheltenham Bold Shaded—8-72 point

Shaded Type a stylish

Old Black—10-36 point

Notice is hereby given

Nicolas Cochin—12-72 point

Nicolas Cochin had memorable

Nicolas Cochin Italic—12-48 point

A Brief Extract from History

Guildford Light—8-72 point

During the reign of the King

Guildford Medium—8-72 point

Forms a most attractive type

Guildford Bold—8-72 point

Should be given with care

H.W. Caslon & Co. Ltd., Typefounders

LONDON, ENGLAND

Ill. 24. Caslon type faces, 1935.

Nonesuch and Curwen Presses, and in New York the Woolly Whale Press, a private press, used the "Locarno" and "Neuland" types of this gifted artist to great advantage (see Appendix). "Kabel" is his sans serif.

Paul Renner, another German designer, was most successful with his "Futura", by far the best of the "sans" faces on the continent, and immediately followed by others. Erbar's Mediæval and Jost's design are shown in the Appendix, and the fine designs by Ehmcke should not be left without mention. Like Paul Renner he also uses the pen for expressing his ideas in writing. Weiss is another countryman of these versatile artists, whose italic and roman are internationally admired. With the "Futura" and the strikingly novel "Trafton" italic, designed by Howard Trafton, they may be seen in the pages of the Bauer Typefoundry in our Appendix. One of Britain's noteworthy contributions to type forms of recent years is the "sans" designed by the sculptor and engraver Eric Gill, whilst Graily Hewitt did a novel "Treyford" type for the Oxford University Press. The Ludlow was very successful in the "Stellar", and on the other side of the Atlantic it is particularly W. F. Goudy who produced several fine alphabets, among which we may mention Kennerley, Modern, Goudy Open, and Old Style, all of which won general recognition.

Fine fonts were made also by D. B. Updike, author of *"Printing Types"* a most important work on the subject; Dard Hunter, and Bruce Rogers, who crossed the seas to provide the Monotype with his "Centaur", described by himself as modelled on Jenson's example.

Douglas McMurtrie justly claims that the United States have "a great deal to be proud of in its accomplishments in the field of type design in the last twenty years", which "will compare most favourably" with the progress made in any European country. He might have added that the activity of Edmund Gress and . . . . McMurtrie himself has not been without influence on this result. The Linotype owes much to Edward E. Bartlett; we would refer to our appendix again where the Linotype Estienne, Baskerville and other fine letters are shown. The Monotype has done no less to improve both type faces and printing, its Centaur, Plantin, Garamont, Gill, Poliphilus, Fournier and other faces are at the printer's service and need no recommendation. The American Typefounders are equally busy: Cheltenham is less in vogue now than some years ago, but they have placed numerous new fonts at our disposal; Goudy, Cloister, Bodoni etc. are seen in these pages, and attention has already been drawn to others. Both in general printing and private press productions, in advertisements and all sorts of display America has unfolded an activity which equals its good taste.

Thus, century after century, in one land or another, the artists, scholars and typographers have built up this diverse art of the alphabet. To-day the printer and the reader faced with such *embarras de richesses*

in this matter of type faces, may easily forget the simplicity of the early days, the transition from the pen to the wooden block and thence to the metal type, the patient labour of the first creators of our letters, the research of later scholars. But those of us who love fine printing will be glad to give our meed of praise to all who have laboured in this rich field of human endeavour, and given us the form and shape of our letters as we have them to-day.

POLIPHILUS

CENTAUR

SANS-SERIF BY ERIC GILL

Ill. 25. "Monotype" type faces.

CHAPTER II

THE INVENTION OF PRINTING

The end of the Middle Ages, the beginning of the Renaissance, was the period in which the elaborate process of copying books in manuscript became too slow a technique for the increasing demand. Not only had new techniques to be invented; but the material for books, which until then had been parchment, had to be produced more swiftly and in larger quantities than the careful preparation of sheepskin would allow. The manufacture of paper and the invention of printing made religious and scientific learning no longer the monopoly of princes and wealthy churchmen.

Till then the scriptorium, or writing room of the monastery was the place where carefully studied letters were inscribed with endless patience, where the rubricators enriched their black with red or green versals, where illuminators painted the loveliest miniatures, heightened with precious gold, to mark the beginnings of chapters. Such a one the reader will find as the frontispiece of this book — a reproduction printed with almost mediæval care by the Beck'sche Buchdruckerei.

If we speak of the invention of printing it may seem a little strange that we should have to make clear the meaning of the term, yet so much controversy has resulted from loose terminology that we shall be wise to define precisely. If we think of printing as the technique of producing books, we must bear in mind that other printing preceded the production of books and was in operation long before a book came from a press. Many avid discussions could have been avoided had authorities themselves been clear on this point before emptying the vials of their wrath and writing ink on their opponents. Seals of engraved metal, wood or stone have been printed in wax for more than two thousand years, and impressions have been taken from them in many different substances. The further idea of cutting lines into wood, inking the little plank, and then pressing a sheet of parchment or paper on it, did not occur to Europeans until about the year A.D. 1423. The Chinese, of course, had practised this technique centuries before our ancestors re-invented the same method. The oldest woodcut bearing a date is of A.D. 868. A guide to Chinese printing for anyone interested in this particular field is Mr. Carter's "*The Invention of Printing in China*" (Columbia University Press, New York, 1931).

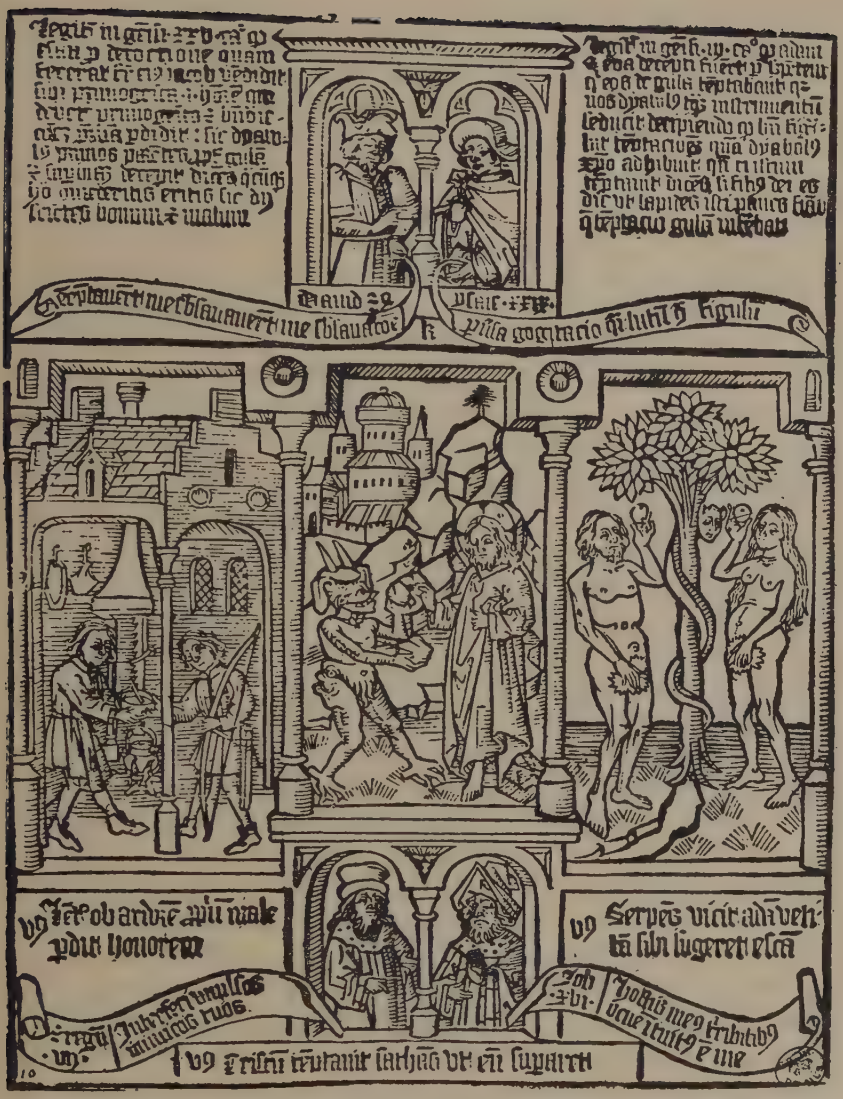
In order to have the aid of imagery when instructing the believer or converting the heathen, the mediæval monk invented this art of woodcutting, drawing on the wood a representation of the Virgin, Christ on the cross, or some saint whose life was an example of Christian living

and whose miracles reflected to the glory of the church. He cut away those parts which should remain white on the paper, and left the original surface standing where a line or a mass was to be printed. Having coated his block with a thin ink mixed with starch, he laid a sheet of paper over it, and by rubbing this on the back, an impression was obtained. At this stage of the evolution of printing a brush was generally used to supply the pressure to transfer the ink from the wood to the paper. Obviously by this method the problem of duplicating swifter than by repeating individual drawings was solved, for each new copy required only fresh inking and the pressure of a further sheet.

These coarse prints obtained in a few minutes for the common folk suited the same purpose as the magnificent Books of Hours with their gold, red, blue and green hand-illuminations over which months or years of pious labour were spent, and which assisted kings and popes in their religious devotions. For these princely books nothing was considered too valuable to adorn the holy legends, the life of Our Lord, and similar subjects. Bindings made of the finest procurable leather, ornamented with relief work in pure gold, decorated with ivory and precious stones, gave external expression to the great intrinsic worth of the sacred contents. The coming of the wood-block print gave the common illiterate people a tiny share in this heritage of sacred things.

After the picture, the word. Sometimes the name of the saint represented was cut into the block. Then short texts were occasionally added, filling ribbons arranged to decorate the space round the figures so as to obtain a well-designed whole. Such a print—"*Einblattdruck*" as it was called, a single-sheet print—was printed from one block of wood, and probably distributed by priests to adorn the houses of their parishioners when they visited them, or perhaps given out when the congregation left the church after service.

The next step towards the printed book, more or less comparable to the existing written book, was the so-called block-book. Several sheets of these illustrations were bound together. We must realize, however, that the procedure of printing described made it possible to print on one side of the paper or parchment only. The ink used was very thin, with but little body, and therefore the rubbing had to be done with great force. The result was that the relief lines of the wood-block were pressed into the paper to such an extent that a considerable indentation ensued. This made the surface of the paper at the back of the print entirely unsuitable to print upon. A further difficulty arose if the front on which the first print had been obtained was to be rubbed with the necessary force, for this would have ruined the existing print entirely. By the rubbing process, therefore, paper could be printed only on one side; and, as a book in which every other page was blank looked unsatisfactory and unlike the written books which did not have this dis-



Ill. 26. Page from a block-book. "Biblia Pauperum". The Netherlands, about 1450.

advantage, it became customary to paste two of the single-sheet prints together in making these small block-books. In this way an imitation book was created from single-sheet prints. Such books contained but a very limited number of printed pages: a few dozen at most.

Some of these old single-sheet prints and some of the old block-books have been preserved, and many fragments have been found. Their printers were not called book printers in their own time: such a sheet was termed *"Brief"*, the printer *"Briefdrucker"*, *"Briefmaler"* or *"Heiligendrucker"* in Lower Germany; and in the Netherlands *"Printers"* or *"Beeldekensprinters"* (the old word "prent" or "print" meaning printed image, thus "printers of images"). What these men produced were holy prints and in some cases a series of such prints pasted and bound together: no more. Although this is a fascinating precursor of the true thing, we cannot legitimately speak of this technique as the printing of books.

This method was employed in Lower Germany, the Rhineland, and in the Netherlands. Here the Brothers of the Common Lot, the *Clerici Vitae Communis,* did much to further culture. The Brotherhood was founded by Gerhard Groote in Deventer, Holland, in 1383, and soon had started all over the country innumerable schools where reading and writing were taught. These two regions were the first in Europe where general culture began—culture no longer the privilege of a handful of nobles and churchmen.

The earliest print we know, the earliest that is bearing a date above dispute or suspicion, is the famous St. Christopher of 1423, a German work now preserved in the John Rylands Library at Manchester (Plate XXXIII). A print in the Brussels Print Room representing the Virgin bears the date 1418, but this is suspect in the eyes of some historians, although the picture is accepted as being one of the earliest extant.

The first block-book bearing a date is one of the year 1470. Several others are without doubt older, but since they are undated this is a very difficult matter to decide. These old European woodcuts were meant to be coloured by hand, the printed outlines serving merely as a framework for the colour. Many are thus treated, but alongside these we have discovered others which remained uncoloured. The actual colouring is executed very coarsely and the artistic value of most prints is not high.

When we turn to the cutting of text matter in the wood-blocks the difficulties are manifold. Sometimes texts were added in writing to printed images for this reason. The wood-cutters had not had much experience and it will be readily understood that the cutting of letters, or rather the cutting of such white spaces that the shapes of letters remain in relief required the highest skill. The obstacles in the way of printing actual text matter from wood were almost insurmountable.

Every individual letter, every a, every b, which occurs on each page has to be cut out separately. If one realizes how much care is necessary to cut away the whites which by leaving the remaining wood constitute an a, will be readily understood what an immense amount of work is required to cut out one single line of, say, a dozen words, built up of thirty, forty or even more letters. Moreover the slightest error is irreparable: the tiniest particle of wood cut away in excess cannot be restored. Add to this the fact that the slightest alteration desired necessitates the cutting of the entire page anew. And when all this work is by a miracle of accuracy completed it can be made to serve for printing none other than the one engraved text.

For these reasons the block-books were employed only for small books with limited text, such as school-books, used to teach the alphabet, or those which assisted the young monks when they memorized the contents of the Bible, for it was obviously impossible to provide sufficient copies of the Scriptures to supply each with one. The Art of Remembering, "*Ars Memorandi*", was therefore the subject of one of these old block-books. It contained a series of designs planned to assist the memory in recalling the chapters of the Apocalypse and the Gospels, numbers being added to the details of the illustrations. Others were school-books such as those by Donatus, whose "*De Octo Partibus Orationis*" was used for study during many years; or Alexander Gallus's "*Doctrinale*". These books were reprinted many times.

There were also treatises of the nature of the famous "*Ars Moriendi*", The Art of Dying, a work which enjoyed general favour, appearing in Latin, Dutch, German, Italian, French and English in the course of time. Few of us to-day care for the ideas embodied in such books. This one depicts eager devils about the couch of a dying man, a subject well calculated in that day to bring sinners to repentance. The "*Biblia Pauperum*" or Poor Preacher's Bible; the "*Historia Virginis Mariæ ex Cantico Canticorum*", the History of the Virgin as it is prefigured in the Song of Solomon, are other well known works of this period. One of the most interesting is the Mirror of Human Salvation, "*Speculum Humanæ Salvationis*". This book, together with the *Donatus* and the *Abecedarium*, is of paramount importance not only because of its contents in which the author laments the evils fallen upon us in consequence of Adam's sin—blindness, deafness, lameness, floods, fire, pestilence, wild beasts and lawsuits—but because we are here confronted with the beginnings of book printing. The *Speculum* contains pages which are surmounted by a woodcut illustration printed in a pale water-colour ink as described above, whereas the text, arranged in two columns, is not engraved but printed from *movable* type in a thick black ink and probably in a press (Pl. V). This thick ink implies that the letters have been printed from metal; their position shows that they were individual

characters, i.e. cast type; and a page composed of hundreds of such tiny pieces of metal must have been printed in a press as rubbing is a serviceable method only if impressions are made from one *solid* block. Here, at last, we have true typography, the art of making books.

Let us examine the press first.

If we bear in mind that written books having text on both sides of the sheet were, without exception, the only books in existence before printing came on the scene, it will be understood that when we speak of the art of printing books we must needs indicate such printing as renders printing on *both* sides of the paper possible. A press, unheard of previously, is indispensable for that. The invention of printing means, therefore, the invention of the printing press whereby the horizontal rubbing is done away with and vertical pressure takes its place. Thus no harm is done to the first printed side when the back is printed subsequently.

How important was the printing on two sides of the paper or parchment may be seen from the fact that writing material was so scarce that parchment manuscripts were occasionally utilized for a new text by scraping off the ink of previous writing. Such a palimpsest (Pl. VII) is by no means a rarity in old libraries.

It is interesting to note that in the case of the Japanese picture books the difficulty resulting from printing without a press is overcome by leaving the backs blank and folding these blank pages together in such a manner that the fold of the sheets is on the outside and the open sides of the folded sheets in the back of the book. Thus the ugly and superfluous white pages are camouflaged, but one cannot really escape them. Again a double quantity of paper is used—a possibility in Japan of the later centuries where paper was made in large quantities, but a luxury and waste which could not be afforded in Europe between 1400 and 1500.

To save both space and time the scribes had complicated systems of contraction for words which frequently occurred: a primitive form of shorthand. Nor could much space be afforded between the words. These characteristics we find also in Roman manuscripts (ill. 2—5). The mediæval scribe and the early printer contracted domini to $\overline{\text{dni}}$., Jerusalem to $\overline{\text{Jerlm}}$. etc., the stroke denoting that the word was abbreviated (see ill. 6).

Before we can speak of a printed book, however, we must have that other element of movable, separate letters. For one page we want hundreds of letters, and if they are cut separately instead of being engraved on one block of wood we can obviously employ them over and over again for the building of words in any order that may be desired. It is almost impossible, however, to cut separately in wood small letters such as are used for a book page; impossible at least to do so

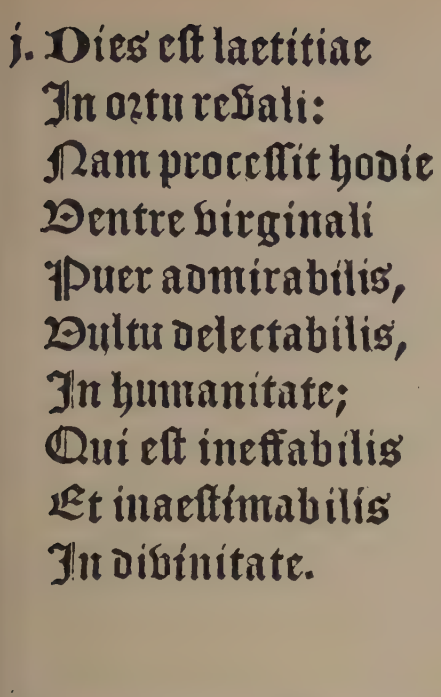
Ill. 27. Woodcut illustration (self size) from a block-book, the "Ars Moriendi" or Art of Dying Becomingly. The Netherlands, about 1450. The illustration represents the temptation to impatience.

in such a refined manner that they will fit easily together in the endless variety of combinations essential. If we examine the woodcuts of the period we speak of it is clear that with the only available tool, a knife, such accuracy remained a desire unfulfilled. Present-day printers, it is true, do use wooden letters, but these are on a large scale compared with those in the old books, and they are rendered perfectly rectangular with mechanical aid. Wooden type also necessitates cutting every individual letter. The second *conditio sine qua non* for printing books, therefore, is that only one model of each letter should be engraved and a large number of copies made from this by casting them in metal. In other words we need the invention of type and typography.

Thus the press, the printing on two sides of the paper, and the casting of movable type are essential if we are to speak of the art of printing.

Even with these we still lack one factor: a workable ink. The water inks had worked quite well on wood, as witness the unsurpassable Japanese woodcuts printed, as the primitive books were, in water inks with a medium of starch. But such water colour cannot be used on cast metal type with good results. The ink cannot be spread with equal consistency. Something that will give it greater body and have a greater "hold" must be employed, and this substance was found in linseed oil, a more sticky medium than the starch water of the wood-block printers. Here we have the last but not the least important of the constituents of true book printing. In this art the preparation of the ink with oil inaugurated a new era. It is an invention which ranks with that of the brothers Van Eyck who are credited with being the first to substitute oil for the egg medium hitherto used in artist's colours.

The casting of movable type—the principle on which, more than on anything else perhaps, book printing depends—is not easily performed. It is done in our day with the aid of a perfected instrument shown on Plate XXII. But already in the days of ancient Rome medals and coins of very delicate modelling were cast in metal with the aid of a matrix, a mould or negative, made of clay or fine sand mixed with some oily substance to keep it together. This method may have been employed by early printers, and that it enables one to obtain excellent results may be seen in ill. 28. Later, lead and copper took the place of the clay moulds and matrices, as the typefounders' moulds are generally called, and then the instrument just mentioned was used. Upon the evidence of a picture of a typefounder shown in a book of 1568 (ill. 38) many experts hold that in that year the clay method was still employed, the invention of the instrument being generally ascribed, not without reason, to Gutenberg (about 1455). The question of where the real printing of books begins thus resolves itself into the question whether both techniques of casting letters are considered "up to the mark", and


j. Dies eſt laetitiae
In ortu reſali:
Nam proceſſit hodie
Ventre virginali
Puer admirabilis,
Vultu delectabilis,
In humanitate;
Qui eſt ineffabilis
Et inaeſtimabilis
In divinitate.

Ill. 28. "The Latin chant "Dies est laetitiae" has been printed from type cast in clay. Present-day matrices for casting type are of copper. It is a well-known fact that not only in the first decades of printing but also in later times lead matrices were employed. The result of our present experiment proves that it is possible to produce good type even by the clay-matrix method. We do not intend to prove more, but this result of the experiment makes it clear also that either one or several early printers may have printed from type thus made". This reproduction and the above quotation are taken from a little Specimen Book printed by Messrs. Enschedé, typefounders and printers, Haarlem, Holland, in 1927. That the Latin text was set in *movable* type may be seen from the second line, where a g stuck to the inking roller, and was accidentally placed upside down when put in its place again. Part of the edition therefore has the g in its proper position, part of it shows it upside down. Similar errors often occur in the early Dutch books, and thus prove that they were not printed from woodblocks.
The present reproduction shows a black letter of much less perfection than the Specimen Book printed from the type itself, which the reader should bear in mind. Perhaps an inexperienced inventor about 1440 did not cast in clay with so fine a result as this famous typefoundry in 1927, but this would not affect Messrs. Enschedé's statement, nor the possibilities of casting serviceable type in the pre-Gutenberg method.

der ind Abt zo Spãheym her Johãnes vã Trettenheym. Jrẽ deſe hoichwyrdige kũſt vurß is vonden alter eyrſt in Duytſchlant tzo Mentz am Rijne. Jnd dat is ỏ duytſch ſcher nacion eyn groiſſe eirlicheit dat ſulche ſyntrijche mynſchen ſyn dae tzo vyndẽ. Jnd dat is geſchiet by den iairen vns heren/anno vñi.CCCCxl.ind vã der zijt an bis men ſchreue.l.wart vnderſoicht die kunſt ind wat dair zo gehoirt. Jnd in den iairẽ vns heren do men ſchreyff.CCCCC.l.do was eyn gulden iair/do began men tzo drucken ind was dat eyrſte boich dat men druckde die Bybel zo latijn/ind wart gedruckt mit eyn re grouer ſchrifft.as is die ſchrifft dae men nu Myſſebicher mit druckt. Jtem wiewail die kunſt is vonden tzo Mentz/als vurß vp die wijſe/als dan nu gemeynlich gebruicht wirt/ſo is doch die eyrſte vurbyldung vonden in Hollant vyſſ den Donaten/die dae ſelffſt vur der tzijt gedruckt ſyn. Jnd vã ind vyſſ den is genomen dat begynne der vurß kunſt.ind is vill meyſterlicher ind ſubtilicher vonden dan die ſelue manier was/ vnd ye lenger ye mere kunſtlicher wurden. Jtem eyn re genant Omnebonũ der ſchrijfft in eyn re vurrede vp dat boich Quintilianus genoempt.vnd ouch in anderen meir boicher/ dat ey Wale vyſſ Vranckrijch/genant Nicolaus genſon haue alre eyrſt deſe meyſterliche kũſt vonden/mer dat is offenbairlich gelogen.want Dij ſyn noch jm leuen die dat getzuigẽ dat men boicher druckte tzo Venedige/ee der vurß Nicolaus genſon dar quame/dair he began ſchrijfft zo ſnijden vnd bereyden.Der der eyrſte vynder der Druckerye ỏ geweſt eyn Burger tzo Mentz.ind was gebren vã Straißburch.ind hieſch joncker Johan Guden burch Jrẽ vã Mentz is die vurß kũſt komen alre eyrſt tzo Coellẽ.Dairnae tzo Straiſ burch/ind dairnae tzo Venedige.Dat begynne ind vortganck der vurß kunſt hait myt mũtlich vertzelt ỏ Eirſame man Meyſter Vlrich tzell vã Hanauwe. boichdrucker zo Coellẽ noch zertzijt. anno.CCCCCxciy.durch den die kunſt vurß is zo Coellẽ komẽ.

Ill. 29. The passage in the Cologne Chronicle, 1499, dealing with the early printing in the Netherlands, mentioning the Donatuses printed in Holland before Gutenberg. The capitals are decorated in red which becomes black in photography, and for this reason are less clear in our reproduction than in the original. By courtesy of the Library of the Amsterdam University.

is thus, to some extent, a matter of personal judgment and feeling.

One other problem of this early history of our subject is that of the rival priority claimed for book printing by the Dutch and the Germans. There is hardly any doubt that the Dutch books preceded Gutenberg, but it is difficult to prove this since none of them bears a date, and historians disagree. The printed sheets (indulgences) and books ascribed to Gutenberg never bear his name, and the dates of but a few are certain, so that priority is a difficult matter to decide. The fact remains that even if the Dutch books were earlier their method was not generally adopted, whereas Mainz printing went all over Germany and even went abroad and to the Netherlands where the history of the dated printed book begins in 1573. Must these early specimens, therefore, be looked upon as isolated experiments, or as the foundation stone of the art? Again we must leave it as a matter of sentiment.

The reader may ask: if these old Dutch books bear neither date nor printer's name, nor even the name of the place where they were printed how are we to know that they are old, or, for that matter that they are Dutch?

Apart from early printed references and a vague legend, to which we will refer presently, such evidence is given by the paper, its watermark (if any) and more particularly by the character of the lettering, and the technical standard of printing, and so forth.

Let us quote here the Rev. Father Kruitwagen, one of the finest experts on old printing and a fervent partisan in favour of Gutenberg. "Works of art these old printings are for this reason", he says, "because before 1500 each printer had to make his own type, ink, etc., and as all necessary manipulations were done by hand, by his own hands, that magic quality which we call personality is present in each book which came from his workshop. Nowadays this is different, with the exception of comparatively rare editions-de-luxe. Every typefoundry will sell every kind of type available to every printer who pays for it. Fitting the types together into words, into lines, into books is mostly done by ingenious apparatus in the hands of the individual firms, but these machines also do the work in precisely the same way for a myriad printers in a myriad towns. In the old days each manipulation, each book, each design of type had its own characteristics, its individuality reflecting the personality, the nationality, the technical ability of its particular printer." His own handwriting, often still preserved, was the form of letter from which he derived his printing types. In this way it becomes possible to locate, to date, and to ascribe the tiniest fragment wherever found. Anonymous printers have been recognized in various fragments by characteristic letters and details of these. Scientific research workers such as Konrad Haebler and Proctor have established this system with extreme care

and marvellous deductive powers, although we cannot expect in such research the precision of a railway time table.

The invention of movable type, it must be recorded, did not do away with printing from wood-blocks. On the contrary, the press, once invented, made it possible to print blocks on both sides of the paper. Block-book school-books continued to be printed till about 1525, a date when movable type had existed for about seventy years. These block-books were then printed with the thicker and blacker ink generally in use because of the metal types, for it was as easy and satisfactory to print with oily ink from wood as from the metal although, as we have seen, the water-colour ink was useless on metal. This explains how printers compose their pages from text set in metal types and illustrations, ornamented initials or versals cut in wood, and then print both simultaneously.

Old books or prints, wholly or partially printed in water inks have a good claim to priority over others, for this reason. The early Dutch books referred to are produced in this way. There are also other arguments for their priority, but first let us hear the evidence of an old German chronicle.

This document of much importance regarding the invention of printing is the Cologne Chronicle of 1499, still extant in several copies. Therein it is stated that the first printer of the town was Ulrich Zell, who was still working there as a printer in 1499 when the Chronicle itself was printed, and who had been born in Hanau in the diocese of Mainz where Gutenberg worked. Zell, therefore, may be looked upon as a man of the immediate entourage of Gutenberg, and what he says is the oldest printed reference to Dutch printing. The Rev. Father Kruitwagen, who calls the talk of the invention of printing in Haarlem (ascribed by some to Laurence Coster, who without doubt lived there) "a fatal obsession" shrugs his shoulders at the Cologne Chronicle. This "Haarlem obsession" would certainly not have affected the opinions of Ulrich Zell in Cologne in 1499, for the first Coster record appeared in print in Holland in 1588! Moreover Zell appears as a forerunner of the *Deutschland über Alles* sentiment familiar to us by this 20th century folksong; his concession to Holland in this matter of printing is the more valuable in that he is so hyper-sensitive in his pro-German feelings. The Chronicle, part of which is reproduced in ill. 30, runs:

> "Van der boychdruckerkunst. Wanne, wae und durch wen is vonden dye unyssprechlich nutze Kunst boicher zo drucke. Item des hoichwyrdige Kunst vursz. is vonden allererst in Duytschlant tzo Mentz am Ryne. Ind dat is der Duytscher nacion eyn groisse cirlicheit dat sulche synrische mynschen syn dae 't zo vinden. Ind das is geschiet by den Jairen uns Heren anno dni MCCCCXL ind van der zyt an bis men schreve L wart

untersoicht die kunst ind wat dair zo gehoirt. Item wie wail die kunst is vonden tzo Mentz, als vursz. up die wyse, als dan nu gemeinlich gebruicht wirt, so is doch die eyrste vurbyldung vonden in Holland uyss den Donaten, die dae selffst vur der zyt gedrukt syn. Ind van, ind uyss den is genomen dat beginne der vursz. kunst. Ind is vill meysterlicher ind subtilicher vonden dan dieselve manier was, und ye lenger ye mere kunstlicher wurden."

Which is:

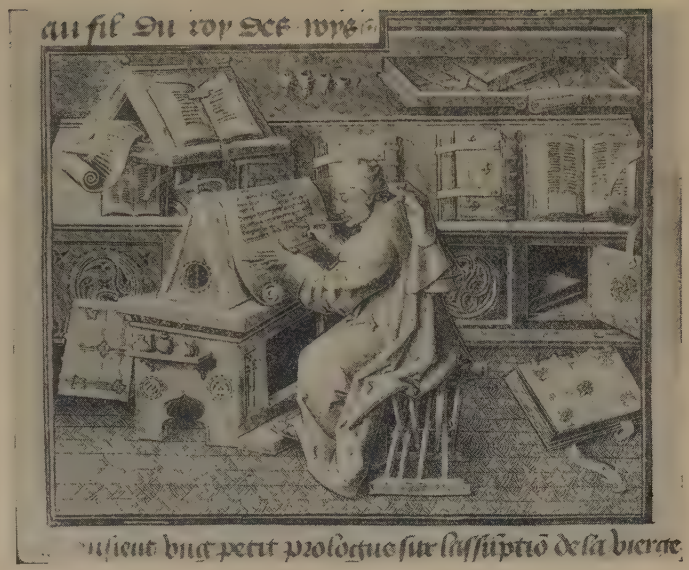
"On printing books. When, where and by whom is invented the endlessly useful art of printing books. Item: this highly noble art aforesaid is found first of all in Germany, in Mainz on the Rhine. And this greatly honours the German nation, that they are such a thoughtful people that they invented this. And this happened in the year of Our Lord Anno Domini MCCCCXL and from then till the year one wrote L (1450 is meant, L instead of XL) was completed this art and everything connected with it."

The unprejudiced reader may observe how Zell praises his whole nation for Gutenberg's invention, despite the fact that this nation allowed him to go bankrupt. It is noteworthy too that Gutenberg is called the "Inventor". But Zell complicates the issue by continuing:

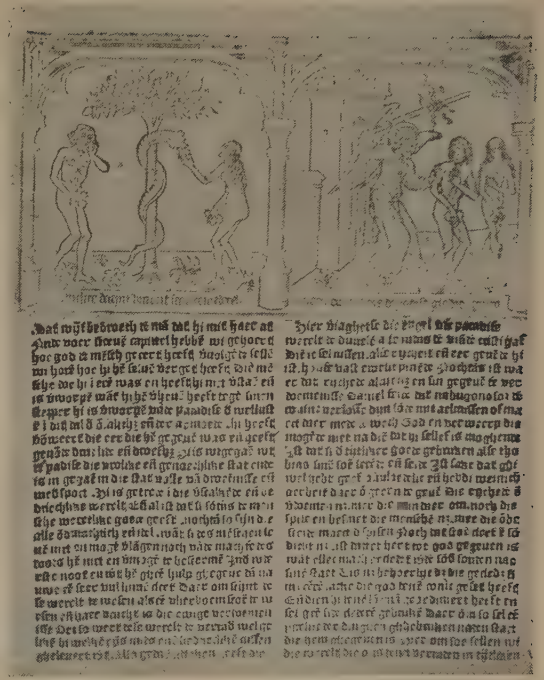
„Item: although this art was invented in Mainz, as we have said before, and this invention is embodied in the method as it is now generally employed, nevertheless the first model is found in Holland in the Donatuses, which have been printed there before that time, and from and out these the said art has had her beginnings and has been improved upon much more masterly and subtle than yonder method was, and become more and more full of artistic value."

Evidently the author refers in the beginning of the second quotation to a more primitive Dutch and a more refined German technique of typecasting. He cannot have had block-books in mind when he speaks of the method "now generally employed", for block-books of German origin were by no means rare by 1499 and would have been quite well-known for many years. For this reason it would be impossible for a printer to refer to the making of block-books as something particularly Dutch. Zell cannot, therefore, have meant to establish a contrast between the block-book and the typefounding techniques, so nothing remains to be deduced than a Dutch technique of casting type less refined than the 1499 German method. One can but infer that he means to say that typefounding was a Dutch invention; but according to the first quotation the hand-mould was an invention of Gutenberg, the Dutch practice evidently being that of casting in clay moulds, which Zell rightly describes as less subtle, less refined. These assertions are borne out by examination of the *Speculum* etc.

When one sees the irregular, technically primitive printing and compares it with Gutenberg's fine Bible—this must be his because it cannot be by anybody else—one question arises: if this Dutch printing did not precede Gutenberg's as Kruitwagen will have it, why then is it so poor? For dated Dutch printing, known to be produced *after* Guten-

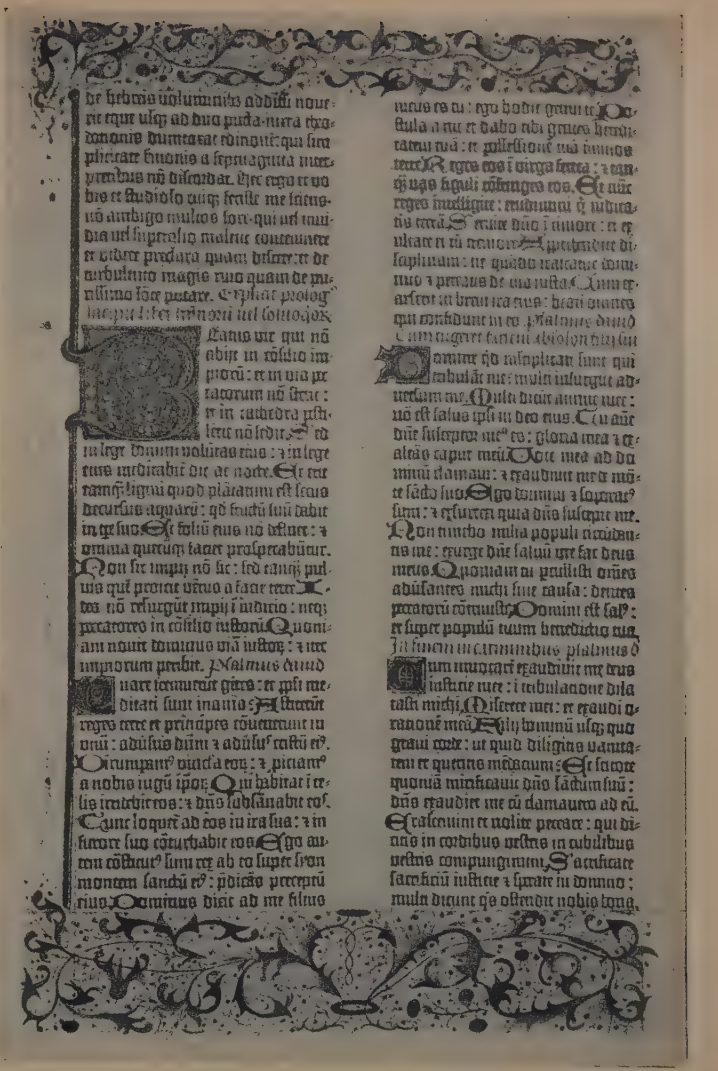


From a manuscript, Bibliothèque Nationale, Paris
Jean Mielot, scribe to Philip the Good, Duke of Burgundy, working at a manuscript, written at The Hague in 1456.

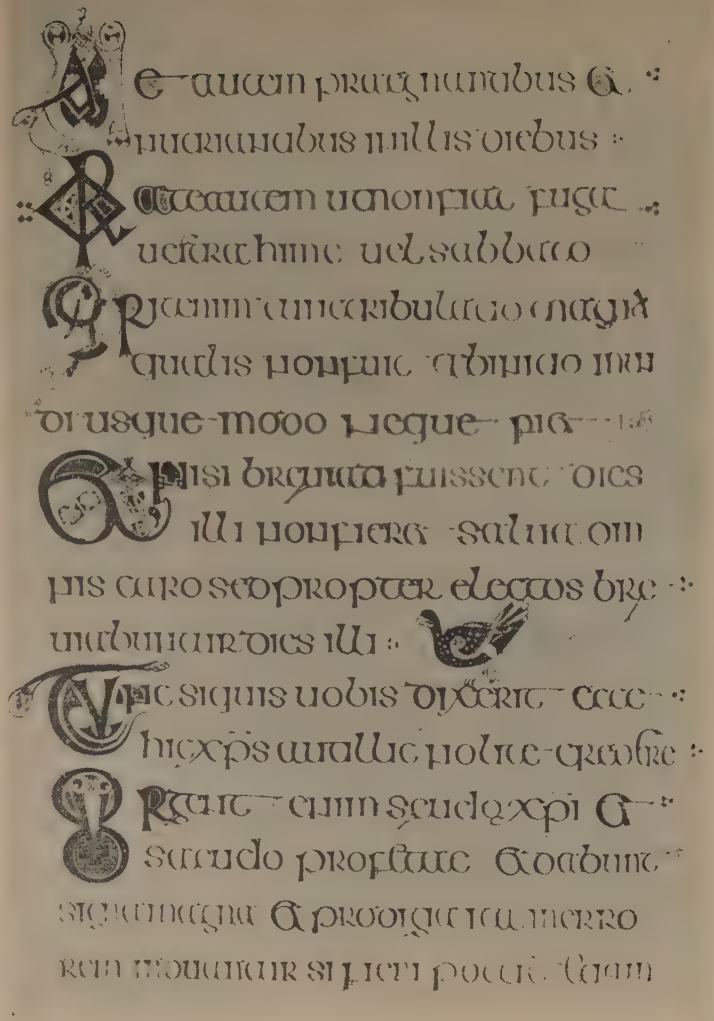


A page from the "Speculum", printed in the Netherlands, partly from blocks, partly from type, probably before Gutenberg.

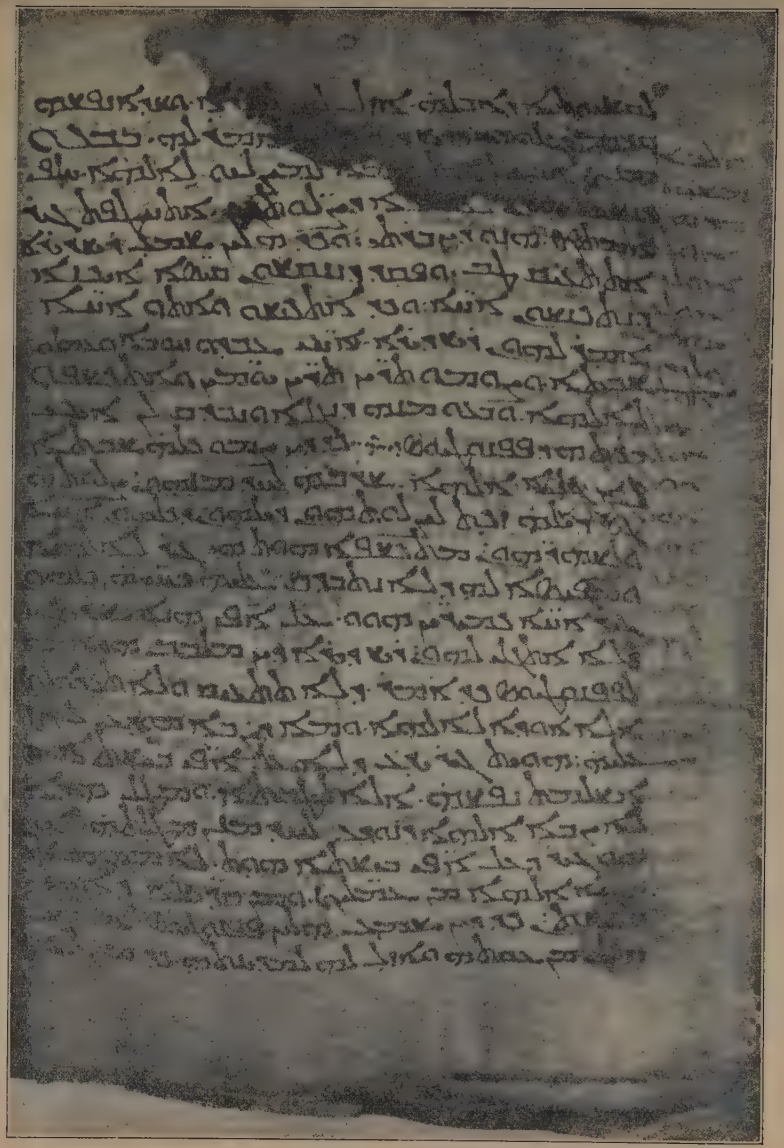
Page from a gradual in the monastery of Gembloers. The name gradual derives from the step (gradus) upon which the singer stood. Text, music and decoration form a perfect artistic unity.



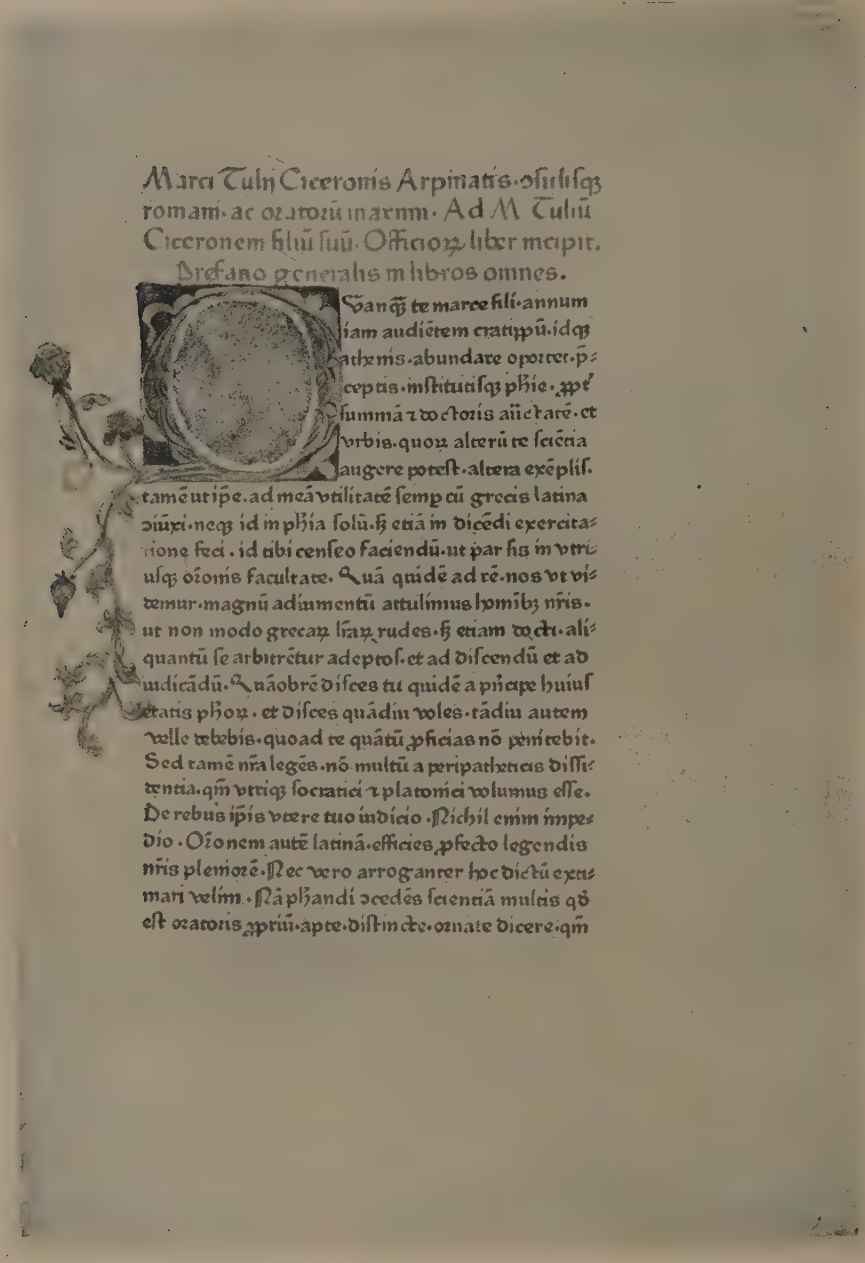
A page from the 42-line Bible, generally attributed to the press of Gutenberg, about 1455. The hand illumination links the first printed books with the written manuscripts.



A page from the VIIth century
Book of Kells, loveliest of Celtic manuscripts.



Palimpsest (parchment).



Marci Tulij Ciceronis Arpinatis · oratoris
romani · ac oratorū imprīm · Ad M Tullū
Ciceronem filiū suū · Officiorū liber incipit.
Prefatio generalis in libros omnes.

Quanq̄ te marce fili · annum
iam audientem cratippū · idq̄
athenis · abundare oportet · p̄-
ceptis · institutisq̄ philo · ꝑ-
summā r doctoris auctoritatē · et
urbis · quorū alterū te scientia
augere potest · altera exēplis ·
tamē ut ipe · ad meā utilitatē semp cū grecis latina
coniunxi · neq̄ id in philia solū · sed etiā in dicendi exercita-
tione feci · id tibi censeo faciendū · ut par sis in utri-
usq̄ oratoris facultate · Quā quidē ad rē · nos ut vi-
demur · magnū adimentū attulimus hominibz nr̄is ·
ut non modo grecaꝝ lr̄aꝝ rudes · sed etiam doctos · ali-
quantū se arbitrētur adeptos · et ad discendū et ad
iudicandū · Quāobrē discipes tu quidē a p̄ncipe huius
etatis philoꝝ · et discipes quādiu voles · tādiu autem
velle debebis · quoad te quātū philosophia nō pēnitebit ·
Sed tamē nr̄a legēs · nō multū a peripatheticis dissi-
dentia · q̄m utriq̄ socratici r platonici volumus esse ·
De rebus ipis vere tuo iudicio · Nichil enim impe-
dio · Oratorem autē latinū · efficies ꝑfecto legendis
nr̄is plenorē · Nec vero arroganter hoc dictū exis-
mari velim · Nā philosophandi accedēs scientiā multis qō
est oratoris ꝓpriū · apte · distincte · ornate dicere · q̄m

A page by Fust and Schoeffer, Gutenberg's rivals. Cicero, De Officiis, printed in red and black. Parchment, dated February 18th, 1466. By courtesy of Messrs. Maggs Bros., London.

berg, is infinitely better and not at all inferior to German work, whilst this bears all the marks of the experimental, of hesitation, of procedure by trial and error in its production (Pl. V—VI, ill. 30). The Chronicle continues:

> "But the first inventor of printing has been a citizen of Mainz who was born in Strasburg and named Joncker Johan Gudenburch. Item: from Mainz the art aforesaid has come to Cologne first. Afterwards.....

Other towns follow. The last statement is incorrect, but apart from this it is clear that Zell is referring in this paragraph to the invention of the art of printing *in Germany*. It is much less a contradiction of his earlier words than it seems to be, and, indeed, may be no contradiction at all. That the spokesman is himself a printer makes the statements of paramount importance. He refers to Dutch Donatuses, and these have been found and with such other early printings as the Speculum are preserved in the Haarlem Museum. Whether they are those actually indicated by Zell or later ones historians disagree. Let us again turn to the Chronicle:

> "This has been told to me by mouth of the honourable man, Master Ulrich Tzell of Hanauwe, printer of books at the present day, Anno 1499, in Cologne, and by whom the art foresaid was brought to Cologne."

Zell also refers to a technical growth in Mainz, which harmonizes well with the early printing of this town, ascribed to Gutenberg; a "*Sybillenbuch*" and German editions of Donatus; a calendar which astronomers have proved was meant for the year 1448; papal indulgences dated (in print) 1454 and 1455; two Bibles, the famous Psalter of 1457 printed by his helper Schoeffer: works which show an increasing technical development. The Psalter is the first dated *book*. It is also the first printed book which mentions its printers: Fust and Peter Schoeffer of Gernsheim, who had been collaborators with Gutenberg. No printed sheet or book bears Gutenberg's name, nor has early Dutch printing any such reference. It is, therefore, from other sources that we are able to assign some works to him.

In the face of the evidence of the Chronicle, some historians pass by the Dutch works without taking them seriously, since no *certain* dates can be assigned to them. There are two reasons for this attitude: firstly, the preferences of national or other unscientific sentiment; secondly, disdain for one so-called historical evidence about the Dutch claim contained in the Coster legend. We have purposely left this in abeyance and allowed historical facts to have the priority they deserve. We have already indicated the amusingly proud nationalism of Zell. Unfortunately similar sentiments function in both Holland and Germany to the present

day, but the student in search of truth can have no traffic with such prejudices.

The Coster legend has always lived in Haarlem and is recorded originally in print by the official historian De Jonghe, or Junius, in his "*History of Batavia*", written in 1568 and printed in 1588. This legend is mentioned by several other 16th century writers, Guicciardini, Coornhert, etc. The story itself is from a doubtful source: Junius writes that an old man of eighty years told him that Coster invented the cutting of letters in the bark of trees and took impressions of these in the sand of a Haarlem park for the purpose of amusing children. Next he started to cast lead and pewter in the moulds thus obtained; till at Christmas, 1440, a German assistant had stolen all his belongings during the night and had disappeared into Germany with them. Coster, thus dramatically bereaved, turned to the casting of beer cans as an outlet for his activities and a use for his now superfluous pewter. Thus runs the story: a fifteenth century film scenario *in optima forma*.

This tale is extremely doubtful, to say the least of it, and opponents have taken full advantage of the fact. As they point out: first of all there was no need to steal the moulds since any apprentice possessed of the knowledge could start a rival printing establishment without theft. In Germany this happened often, the printers' assistants leaving their masters and carrying the open secret to other towns or even abroad. Theft, therefore, is nonsense; and the assumption that Coster's printing activities should be brought to an end by it is nonsense also. To the unprejudiced enquirer one might expect this to settle matters for the Coster legend.

There are yet other powerful arguments. Thefts of letters, of moulds and type would have no point unless the type were used elsewhere. This is not the case: not the slightest trace of Dutch type can be found in Germany. Moreover, such a theft would have meant something of a public scandal in quiet, mediæval Haarlem, and it is remarkable that it is only recorded 128 years later from a story told by an old man.

Such criticism is fatal to the Coster story. Yet there is no smoke without fire, and it is for us to search out the residue of truth (if any) in this legend. If Junius writes romantic nonsense about Coster as an inventor, Coster as the broken victim of theft, it does not necessarily do away with the existence of Coster the printer. He—or for that matter some other man, for the name is not essential—did print from movable type in Haarlem or elsewhere in Holland in spite of the fantastic legend, for there is one point in Junius' story to which he does not attach any importance himself but which nevertheless is extremely significant.

He tells us that Coster, in collaboration with his son-in-law, Thomas Petrus, prepared a thick black and oily ink. As we have explained this

is evidence that metal type was used. This factor may have been added to the story to give verisimilitude; but, if it were added for such purpose, the author would almost inevitably have turned the limelight upon this evidence of his veracity, and this Junius does not do. He passes it unheedingly, as it were, without realizing, since he was a historian and not a printer-craftsman, that this phase of the evidence contains a valuable argument. If the old man who told the story to Junius was a "braggart", as Father Kruitwagen calls him, to the delight of the pro-German partisans, there is a great deal of method in his madness. All the historians from then till now, because they too have not been craftsmen, have followed Junius in stating that a change occurred in the ink without realizing that they were then implying that *metal printing formes* made this change necessary.

Prof. Gustav Zedler, a living German historian, is almost the only man who has approached the matter without bias. (*Von Coster zu Gutenberg,* Leipzig, 1921. *Die neuere Gutenbergforschung und die Lösung der Costerfrage,* Frankfurt a.M., 1923. *Die älteste Gutenbergtype,* Gutenb. Gesellschaft, 1902). We must also mention two other Germans: Karl Dziatzko (*Beiträge zur Gutenbergfrage,* Berlin 1889. *Gutenberg's früheste Druckerpraxis,* 1890); and F. Bauer (*Wer hat die Buchdruckerkunst erfunden?* 1923). Libraries could be filled with older books on the subject, but let us name only the writings of Ch. Enschedé, J. W. Enschedé, C. Zumig, E. Consentius, H. Binz, G. Mori, J. H. Hessels, G. H. Müller, J. E. Hodgkin, R. Fruin, C. Immig, Koning, Meerman, De Vries, Van Westreenen, Schinkel, Noordziek, Gockinga, Van der Linde, Campbell, Loosjes, Paeile, Lehne, Ebert, Kruitwagen, Lichtenberger, Schaab, Wetter, Ottley, Falkenstein, Meisner and Luther.

Father Kruitwagen has tried to ridicule Coster because he appears in the registers as dealing in candles and wine, but it surely shows little knowledge of the lives of great inventors to think that a man cannot be of their company because he deals in humble merchandise,for many great inventors have done stranger business for their livelihood. Moreover, since Coster was sexton at Haarlem, his dealings in candles and wine may only have been for the provision of the church and the sacrament as Zedler has rightly remarked. Is it not equally difficult to see the logic when Kruitwagen writes (*Gutenberg Jahrbuch,* Mainz, 1925) that the fact that the *Speculum* is printed in two inks proves that two men were experimenting in two different towns? Not only is there no argument for such a quaint deduction, but even if proof were given of two towns and two printers this does not in the least alter the character of the printed pages. It is only the details of the Coster legend which become apocryphal; the printing remains. Kruitwagen's writing was welcomed in Germany, but Zedler rightly says that the party cries, "Hie Gutenberg!", "Hie Coster!" have been a potent means of making the facts

inaccessible to unprejudiced thinking. Another Dutchman, the historian J. W. Enschedé, has drawn our attention to the likeness of the type in the so-called Coster incunabula and the handwriting of the period in Haarlem. We have already noted how corresponding characteristics in these two are a valuable means for fixing dates of undated documents. Coster lived in Haarlem, and that is practically all we can certainly say of him; but our scarcity of knowledge in no way challenges the great probability that Dutch printing with movable type is older than its German sister. The identity of the printers of the earliest books cannot at present be established with certainty. Of Gutenberg more is known, but much has been fabricated concerning his exact part in the inventions.

Haarlem in 1823 celebrated Coster; gave him a statue, and honoured him with orations, with fireworks, and with a book of 462 pages of which no less than 70 are in verse. One orator declared that such inventions as Coster's "have their natural birthplace in the regions where we are living". The poetry was characterized by similar hyperbole: ghostly visitants, the kingdom of stupidity, the unholiest of nights, the King of Earth: no phrase was too high-sounding to serve in this eulogy.

Similar bombast has been produced in Germany in their zeal for the *"Hochverdiente Ehrenrettung"* of Gutenberg. "Portraits" of both men, made one or two centuries after their deaths, were produced; and even in 1900 it was still possible for two learned librarians (H. Meisner and J. Luther) to publish a book in which they tell us exactly what Gutenberg thought on various occasions, what his plans were, and so on. To make this more feasible they reproduce a picture of (?) Gutenberg's press, although they confess that 90 % of this is pure fabrication, the only thing old in it being one piece of wood with initials which are not Gutenberg's but can be mistaken for his. If this be science in 1900 we will draw the curtain over the scientific research on our subject during darker ages.

Let us review what is really known of Gutenberg and his press. Johannes Genschfleisch was born about 1400 of patrician family in a house called "zum Gutenberg". He got into troubles from which lawsuits arose, and these are our main sources of knowledge of the man. He was not a good business man, it seems, and his experiments were costly. He was engaged in printing a Bible, and when this was but partly finished it involved an expenditure of something like four thousand gold gulden. The documents written by the secretary during the sessions of the Court are often as obscure in their meaning as in their wording, but a press and printing with its aid are mentioned.

Hans Dünne, the goldsmith, gave evidence that during a period of three years he received nearly three hundred gulden from Gutenberg for work in connection with printing. Other items have been recorded

rottenhem
ſijn cledere
wt in ſcan/
den voer al
le die werlt
Eñ als hij
alſoe naect
ſtōt alſo na
men ſy dat
onnoſele lā
eñ bonden
al vaſt aen
een calom/
ne die alſoe dicke was dat mē die han
den met coerden nauwelijc te ſamen
brenghen mochten. Ende daer ſijn
twee mannen ghecomen met ſcarpe
roeden/ eñ hebben dat lichaem ihesu
dijns brudegoms alſo ghequetſt van
den voeten totten hoofde dat er ghe/
ne ghesontheit in hē ghebleuen en is

Pñs hoc opuſculuz fimtū ac cōpletū. et ad
euſebiaz dei imduſtrie in cuitate Maguntij
per Johannē fuſt ciuē. et Petrū ſchoiffher de
gernſhеym clericū dioteſ ciuſdez eſt conſū=
matū. Anno incarnacōis dñice. M. cccc. lxij.
In vigilia aſſumpcōis gl'oſe virginis marie.

Ill. 30.½(Left). A page from the first dated book printed in Amsterdam, 1506.

Ill. 31. Colophon, or final paragraph, and printer's device from the Bible by Fust and Schoeffer, Gutenberg's rivals, 1462, showing the earliest printer's mark.

without considering that many centuries later these documents would be examined minutely for evidence implicit in them. Gutenberg had helpers, and one of these, Andreas Dritzehn, fell ill. He lived or worked together with a third partner, Andreas Heilman, and the latter declared in court that Gutenberg sent his servant to them shortly before Christmas, "*alle Formen zu holen und werden zerlossen das er es sehe, und ju doch ettliche Formen ruwete*". This is generally interpreted: "for the purpose of fetching away all printing formes and having these melted before his eyes however much he would regret it." The exact sense remains doubtful, the implements referred to being unknown.

Dritzehn died. Gutenberg was evidently afraid that others would discover his secrets. "*Do spreche Gutenberg, sü solltent nach der Pressen senden, er forchte das man sü sehe*". Which is: "Then spoke Gutenberg, they should fetch away the Press, he was afraid others would see it." For some unknown reason this was not done and a later order to the servant was to:

> "gon über die presse und die mit den zweyen würbeln uff dun so vielent die stucke voneinander, dieselben stucke solt er dan in die presse oder uff die presse legen so kunde darnach niemand gesehen noch utgemercken",

i.e.: "to go over (or to) the press and take it to pieces by unscrewing it so that the parts would separate, these parts he was to put into or on the press that nobody could see or understand what is was." (Gustav Mori, a German, thinks these "parts" are the typefounder's moulds). Gutenberg, no doubt, got what he wanted. Nobody can make out to-day precisely what this was, as we know nothing of the construction of his press.

Dritzehn's heirs demanded payment of moneys given by this helper to Gutenberg as apprentice fee. According to a contract of 1438, however, each partner would receive his share in the benefits to be earned from a secret art—evidently printing—and if any partner died a sum of one hundred gulden would be paid. Gutenberg held that Dritzehn owed him eighty-five gulden in apprentice fees and was prepared to pay the remaining fifteen. The court gave a verdict in his favour.

This took place in Strasburg where Gutenberg had come in 1420 on account of riots in Mainz. In 1444 or 1445, however, he is back in his native city, and as his experiments meant great outlay of money he borrowed 800 gulden from a goldsmith, Fust, in 1450, a further 800 in 1452, and 150 from a relative, Gelthuss, in 1488. In 1455 Fust sued Gutenberg for payment of 2026 gulden, capital and compound interest. Gutenberg could not pay, and was obliged to leave his belongings, i.e. his printing office, in Fust's hands. Whereupon Fust co-operated with another helper of the unhappy inventor, Peter Schoeffer, who lived

from 1420—1502, and this combination of capital, plant and craftsmanship produced extremely fine books (Pl. VIII).

Thus—and this is remarkable—it was Gutenberg who found himself deprived of his tools, the position ascribed to Coster according to the Coster legend. We have proof that this did not withhold him from printing again. We know at least that the Archbishop of Mainz supported him financially, and that in 1460 a Latin dictionary, the "*Catholicon*" was printed in the city. This cannot be the handiwork of any but Gutenberg for nobody else printed there at the time save Fust and Schoeffer and these were technically ahead of the *Catholicon* having produced much finer type for a book by Duranti (which left their press on October 6th, 1459). It was the first book printed in *small* type, and seems to confirm a statement that Schoeffer improved on Gutenberg's matrix.

This statement is from the annals of the monastery at Hirshau, dated 1480, in which the Abbot Trittenheim (or Trithemius) says that he has heard from Schoeffer himself that he perfected the making of matrices. This can hardly mean anything else than the invention of the punch (used to the present day) and driven into metal (now copper): a method probably not known to Gutenberg.

If we bear in mind what has been said about water inks and what Messrs. Enschedé's experiment teaches us, these facts seem to confirm that the invention of printing was really an invention in three stages: first we have the Dutch method of founding with the aid of matrices cast in clay (whether by Coster or someone else is immaterial), then Gutenberg's metal matrix (probably cast in soft metal), and finally Schoeffer's method, still employed at the present day (punch and copper matrix and improved hand mould for casting type).

But the general public and nationalistic sentiment like to worship a hero; and prefer to concentrate upon one.

The greatest achievements of early undated printing are two Latin Bibles, one certainly printed in Mainz. They are distinguished from one another by the number of lines to a page: one having 42, the other 36. The authorship of these is uncertain, and both Bibles have been in turn attributed to Gutenberg as well as to Fust and Schoeffer. The 36-line Bible is considered by Dziatzko to be a reprint from the other, and this view is generally accepted. A copy now in Paris of the 42-line Bible, almost certainly by Gutenberg, has a note by the rubricator stating that he finished ornamenting the printed book in August, 1456. The other Bible may have been printed in Bamberg as Zedler's examinations of its paper have indicated, or in Mainz. By whom it was printed remains very uncertain. Since a very fine copy of the 42-line Bible was found in the Library of Cardinal Mazarin in Paris this remarkable work often goes by the name of the "Mazarin Bible".

These old books sometimes fetch extremely high prices, their rarity

even more than their artistic value ensuring this tribute of the sale-rooms. Of the 42-line Bible forty-four copies on paper and eighteen on parchment have been recorded by Schwenke. The 36-line Bible is extremely rare, only twelve paper copies being known. A copy of the Mazarin was sold in London in 1897 for £12,000, and Yale University was presented with one which had cost $105,000.

Thus in such fantastic prices we pay our tribute to the first printers, but which one of them, if any single one, can be said to be the "onlie begetter" who now can truly say?

The truth is more likely to be that suggested by Dr. C. K. Falkenstein when, in his book on printing, he quotes Goethe:

"In every period of civilization an atmosphere of common thought and common feeling is about, and it is just as natural that the same inventions are made by various persons at about the same time, as it is reasonable that in different gardens fruit of one kind will ripen simultaneously."

Does not the poet's vision find material support in the facts revealed by recent investigation?

From a drawing by Rockwell Kent

32223

CHAPTER III

THE DEVELOPMENT OF PRINTING IN WESTERN EUROPE

GERMANY. In the preceding chapter we have considered various viewpoints in connection with the invention of printing and its growth into a process capable of book production as we must conceive it. No controversy exists, however, concerning the generally recognized facts that the art spread over Germany from Mainz, that German printing went trough-out the world, and that Gutenberg's Bible is a fine book in a fine type, a technical achievement of the greatest importance.

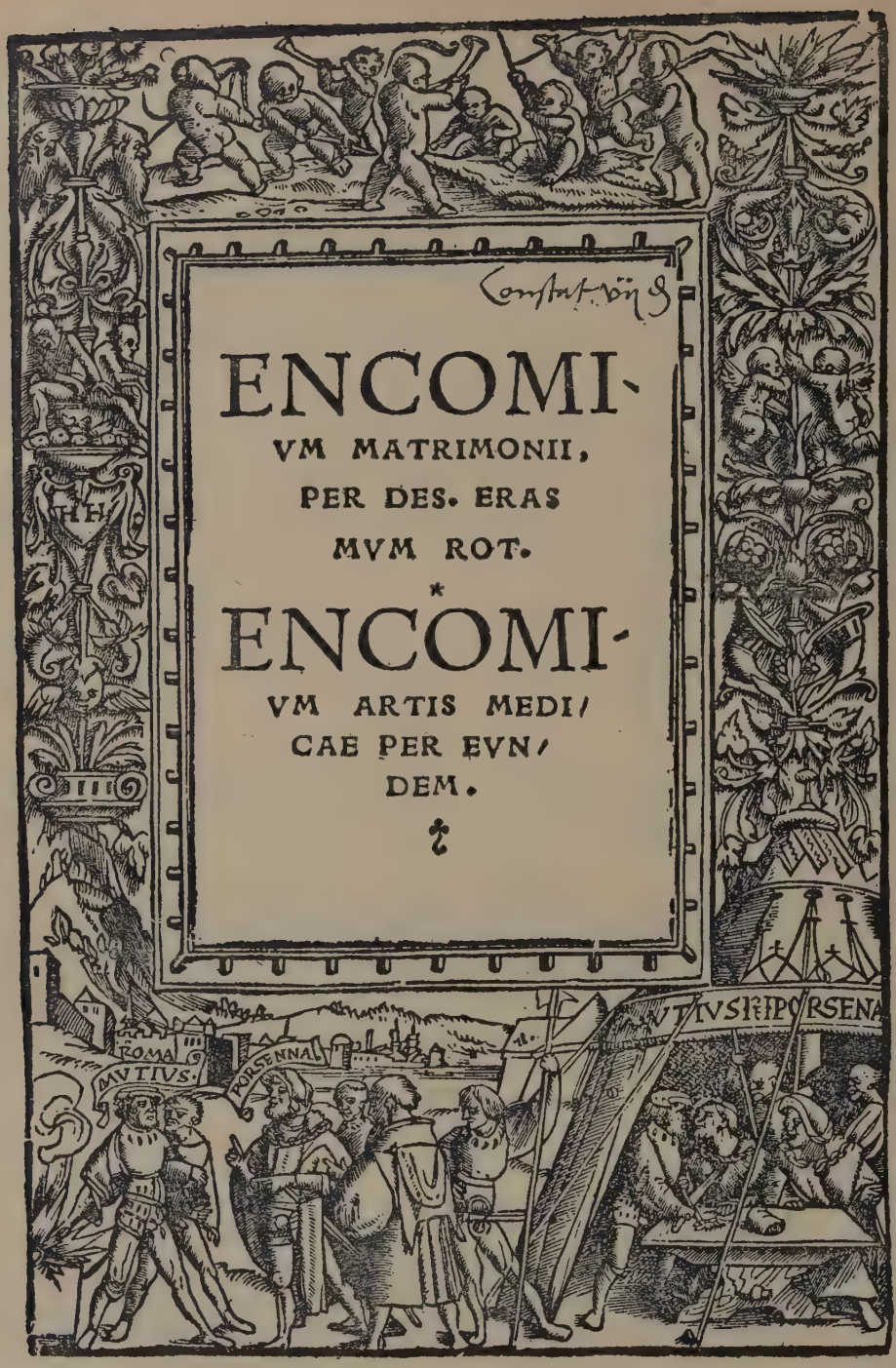
Strictly speaking, the history of printing begins with Fust and Schoeffer's Psalter, since this is the first book to bear the name of its makers and the date of completion in print. The colophon, or final paragraph of the Psalter runs:

> *"Et ad eusibiam dei industrie est consummatus Per Johannem fust Cinem magintinum Et Petrum Schoffer de Gernszheim Anno domini Millesimo CCCC.lvij in vigilia assumpcionis"* (i.e. August 14th, 1457).

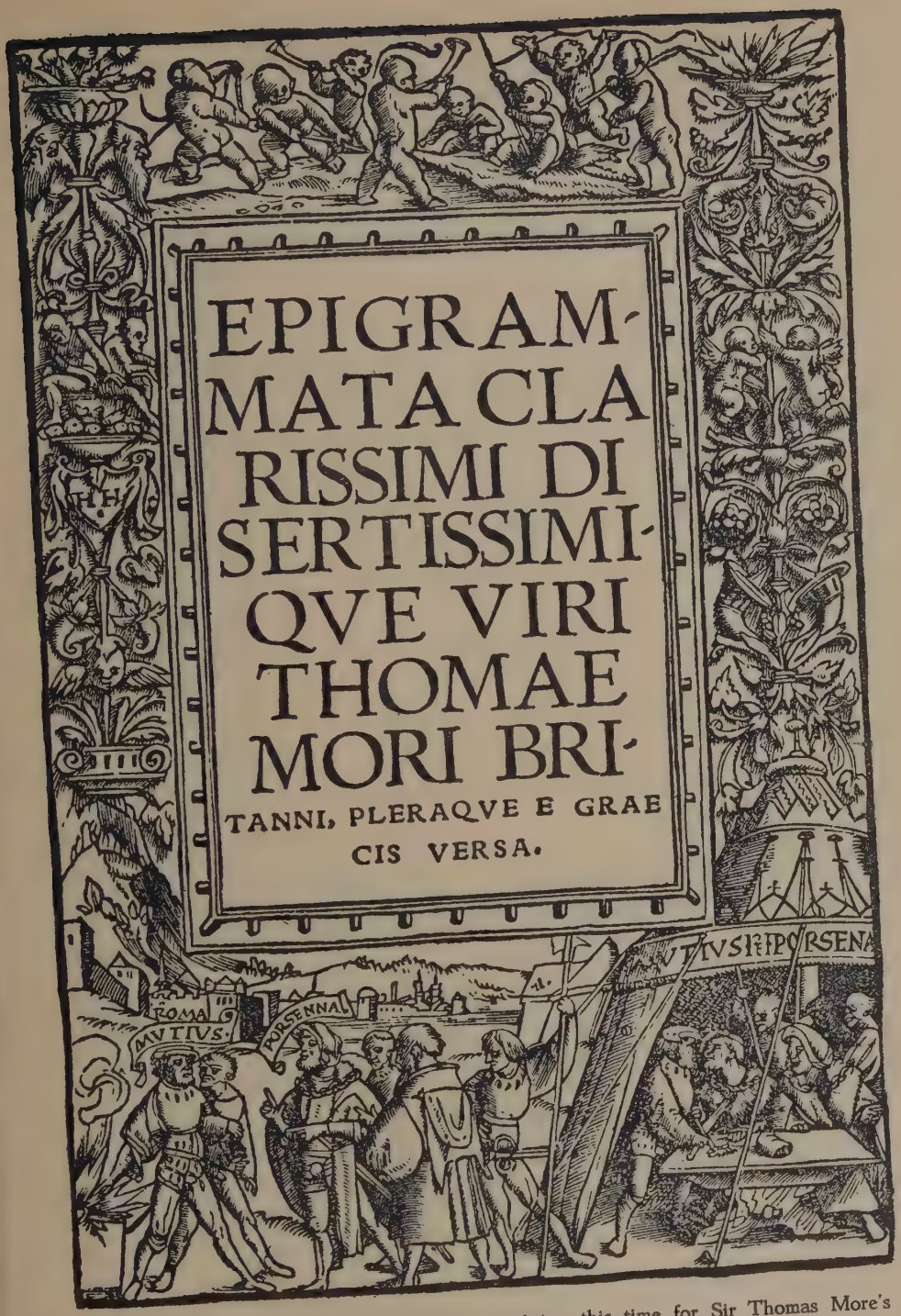
As we have seen before older books occasionally have a written statement in which the rubricator, who decorated the capitals or chapter headings in red (rubra) ink, declares that he finished his work on such and such a date.

One of the pages of the Psalter is decorated with a richly ornamented B in blue and red colouring, on the technique of which again much controversy has arisen. So exquisitely even is the printing of the delicate lines, so perfect the "register" of the colours, that this has often been called the finest technical achievement in the world of the printed book. Only ten copies being known, the Psalter ranks with Gutenberg's Bible as one of the highest valued works in existence. The music notes which it contains have been added by hand, and the coloured initials are now often regarded as having been stamped in. Plate VIII shows another fine book by the same men printed in the small type they introduced.

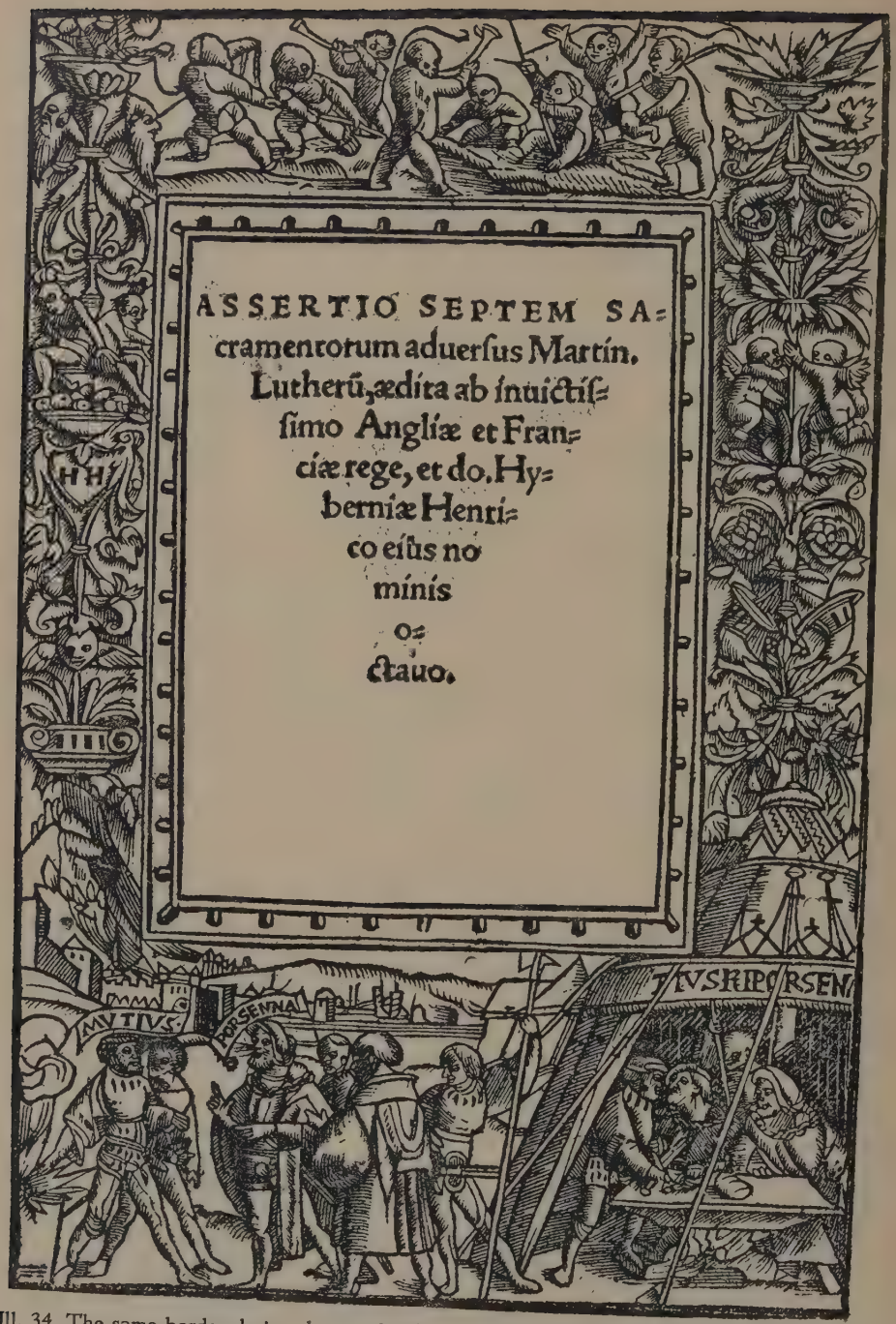
Soon after the Psalter came from the press we find printers at work in Bamberg and Strasburg; then in Cologne where we have the records of Zell working. It is generally assumed that the further dissemination of the art is partly due to the sack of Mainz by troops of Adolf of Nassau in 1462, the printers having little to expect in the plundered town, and trying their fortune in more propitious surroundings. Presses were erected by Germans in Bamberg (1457 ?), Strasburg (1458), Cologne (1465), Augsburg (1468), Basel (1468), Nuremberg (1470) and in about ten



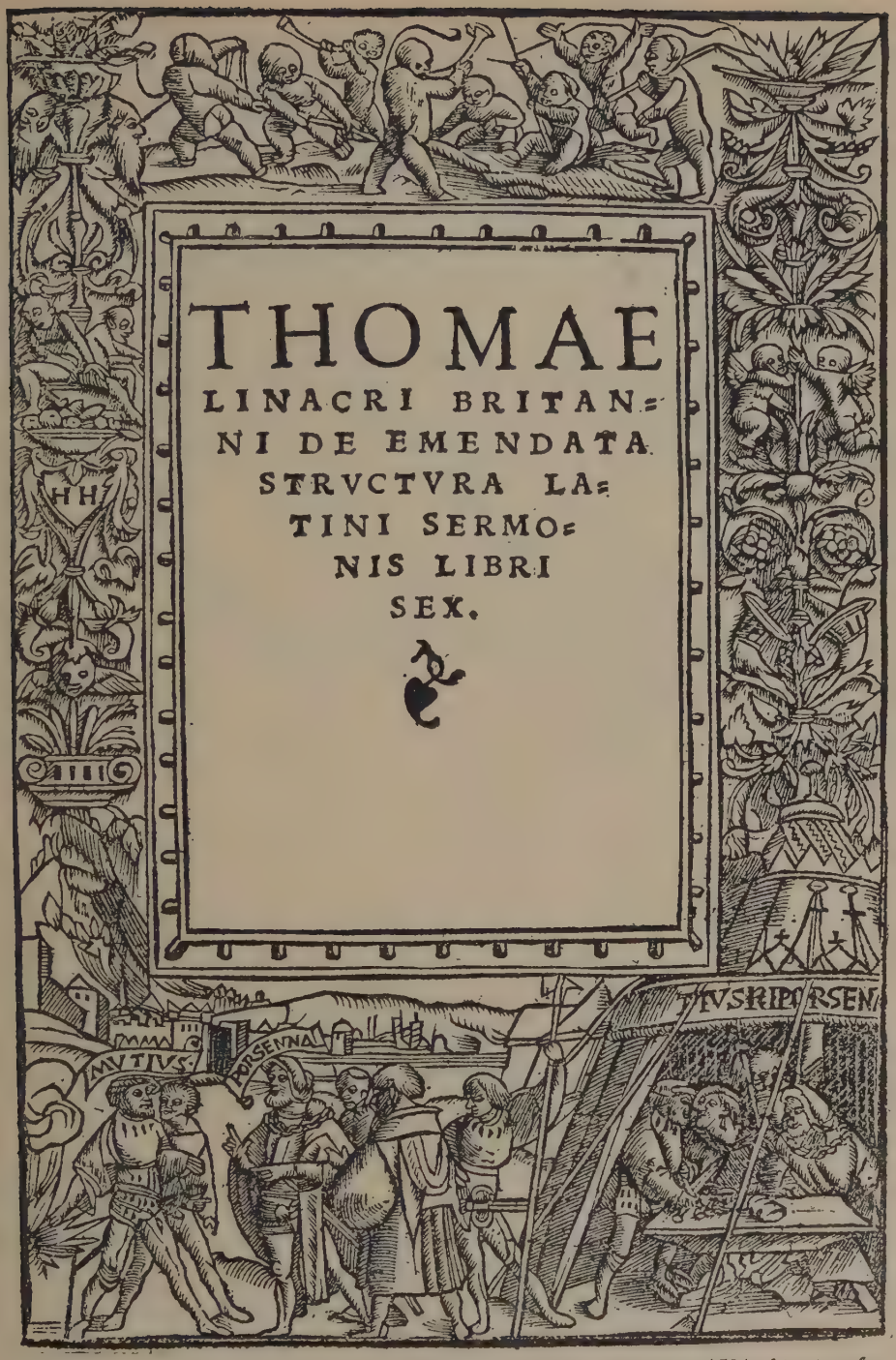
Ill. 32. Title page by Froben, Basel, 1518. From a book by Erasmus of Rotterdam. The border is attributed to Hans Holbein, whose monogram may be seen on the left. Compare with illus. 33, 34 and 35.



Ill. 33. The same border used by the same printer, this time for Sir Thomas More's "Utopia, et Mori et Erasmi Epigrammata" (the Epigrams of More and Erasmus), 1518.



Ill. 34. The same border design, but evidently a copy of that shown in illus. 32 and 33. Title page by Richard Pynson, 1521, for the "Assertio Septem Sacramentorum" of Henry VIII. By courtesy of Messrs. Quaritch, London.



Ill. 35. The same border from illus. 34. Title page by Richard Pynson, 1524, this time for Thomas Linacre's "De structura Latini Sermonis", By courtesy of Messrs. Quaritch, London. All four are specimens of very fine "placing" of the text.

other German towns; also in Paris (1470), Subiaco (about 1464), Rome (1467) and Venice (1469). All this before we have dates in the printing of the Netherlands: 1473 being given in books from Utrecht in the Northern and Alost in the Southern Netherlands which are now Holland and Belgium respectively. The first dated book in England appears in 1477, in Scotland in 1507.

The dissemination of Mainz printing being thus an accepted fact it seems superfluous to show the visitor to Mainz a "Gutenberg" press—a piece of pure fantasy made in Germany in the 20th century, for not the slightest evidence of Gutenberg's implements has come down to us.

Whether the 36-line Bible was printed by him, his two rivals, or by Albrecht Pfister in Bamberg is uncertain. It is assumed to be a later production than the Bible with 42 lines to the page. Certainly Pfister was the first to print illustrated books. Other famous colleagues of Fust and Schoeffer were Johann Mentelin in Strasburg, Gunther Zainer in Augsburg, Johann Zainer in Ulm, Anton Koberger in Nuremberg, and Froben (or Frobenius) in Basel, where Holbein painted his portrait. How rapid was the growth may be seen from the fact that Koberger alone published no less than thirteen Bibles, and in 1509 is recorded to be carrying on business with Paris, Strasburg, Gratz, Ofen, Milan, Como, Vienna, Passau, Basel, Lübeck, Ingolstadt, Dantzig, Frankfurt, Breslau, Posen, Bamberg, Krakau, Lyons, Bologna, Venice, Florence and Genoa. What this meant can hardly be realized by us who have steam and electricity as our servants, trains and automobiles and a world-wide postal system at our disposal.

In Nuremberg, famous as the birthplace of Albrecht Dürer, this artist's woodcuts were printed on a press owned by Hieronymus Andreae, himself an able craftsman, a "Formschneider" or wood-cutter of designs by other men. It was the general practice in those days for the artist to supply the design only. The woodcut was looked upon as a copy, a facsimile, not an original work, and this interpretative phase was carried out by trained workmen as it is with the Japanese woodcuts. Some historians are of the opinion—and they base this on the style of the work—that not a single design was cut in wood by Dürer himself; whereas others assign certain of the prints to the master.

A great number of artists produced the drawings to illustrate all the books demanded. It is not without interest that the two great German artists of the Renaissance, Dürer and Holbein, were pre-eminently linear draughtsmen rather than colourists, precisely because these new opportunities and new direction for art demanded their service to the book and the print rather than to the mural or panel painting of their Italian predecessors.

Bibles occupy an important place in early printed works, and were illustrated with woodcuts, as were the treatises on religious subjects which

Ill. 36-37. Left: The letter D, engraving by the Master E. S. German work, about 1466. Right: Fragment from the Triumphal Car, cut in wood from Dürer's design, composed between 1512 and 1522.

were also in vogue during these first years of printing. Beside these many Chronicles were published, as there was a real demand for general knowledge and history. Koberger, to whom we have just referred, printed a very famous one compiled by Hartmann Schedel in 1493 and decorated with no less than 1800 different woodcuts. In this work the same print is used to represent various towns, or—portraits being imaginary portraits—one print serves for various persons. (This brings the total number of illustrations up to about 2,000.) Such details did not trouble the naive minds of the readers of those days. Let it be said that our own generation, with its implicit belief in print, can hardly afford to smile at this evidence of human credulity. The author remembers a London Press agent who offered to photograph him in any American town he desired, crossing the Atlantic, or travelling in the New World: this without troubling him to leave his London studio. So we may return to our old woodcuts without scorn, realizing that the charming plates in Breydenbach's "Journey to the Holy Land" (1486) were at least as honest.

These mediæval Chronicles contained both plain historical facts and more or less fantastic ones, legends, etc. Cynics might be tempted, therefore, to compare them to our contemporary newspapers. They usually began radically with the story of the Creation, followed by miracles and martyrdoms, and ultimately would turn to incidents of more recent date. In this manner a Cologne Chronicle will contain details about the art of printing and its first arrival in that town, will show the famous cathedral as well as the Three Magi and the refusal of the cities on the Rhine to pay impost. A Chronicle of Saxony will show Noah's Ark, Romulus founding Rome, the deeds of Charlemagne, and a number of incidents from the contemporary scene. Such Chronicles provided Shakespeare with the material for several of his plays: "Hamlet", for example, being derived from a 1514 Chronicle compiled by Saxo Grammaticus and printed by Josse Bade, whose printer's device is shown in illustration 16.

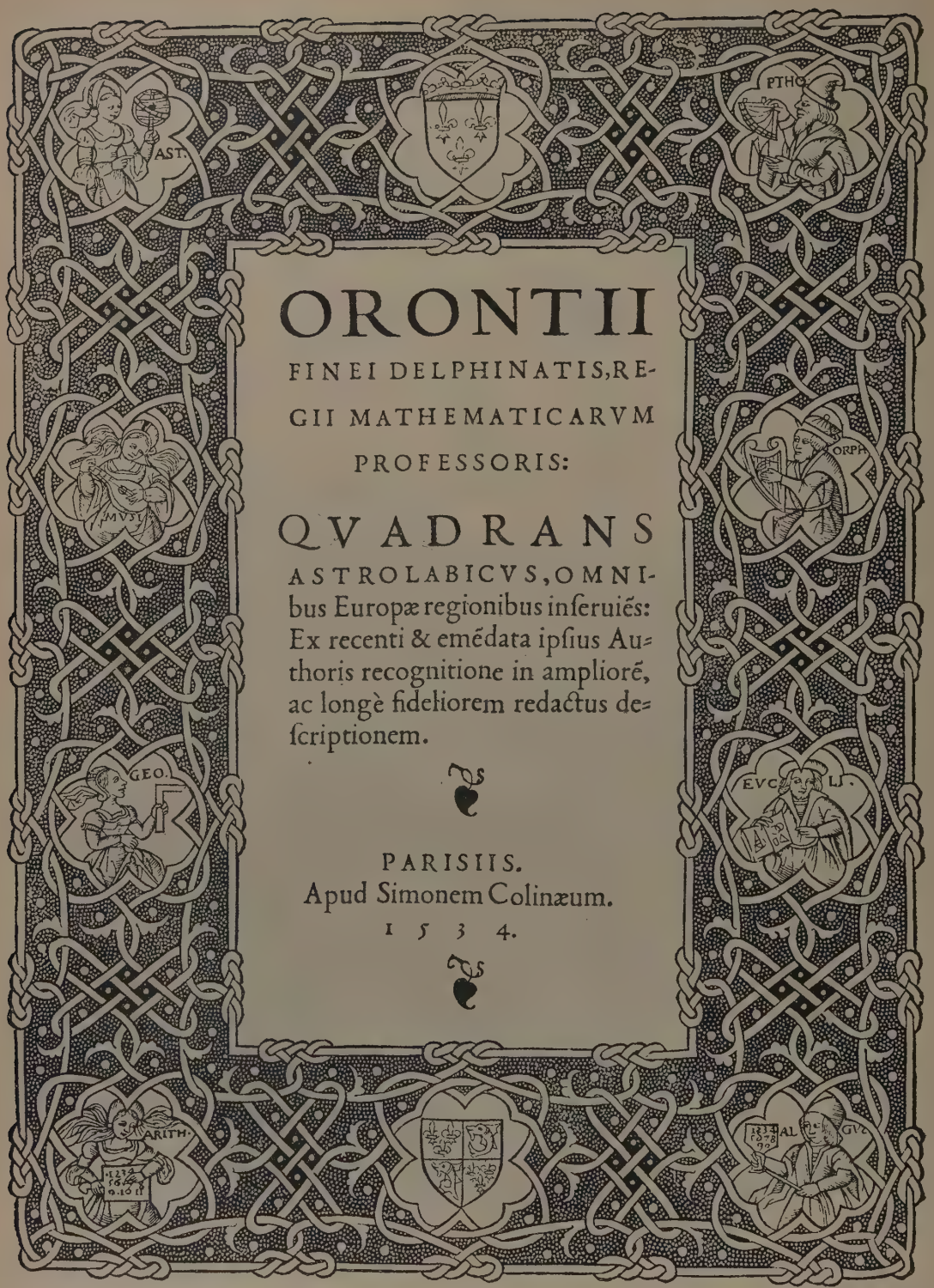
One of the finest of religious treatises is the *"Schatzbehalter"*, or "Shrine of the Veritable Richesses of Salvation and Eternal Bliss", illustrated with woodcuts attributed to Dürer's teacher, Wolgemut. Whereas the older woodcuts are prints in outline, which rely to a certain extent upon hand-colouring, the later ones are often copies of elaborate pen and ink drawings, compositions in black and white with cross-hatching and shading to give tone values, atmosphere and so forth. They are thus quite different from the purely conventionalized early style.

Famous Bibles were printed at Cologne in 1479 by Quentell (reprinted by Koberger in 1483), and at Lübeck in 1494; but Hans Luft of Wittenberg won especial fame for his Bibles. Luther, whose activity caused many a manuscript to be printed, made this town a centre of the

aquam refectionis educauit me: animam meam
conuertit. Deduxit me super semitas iustitie:
propter nomen suum. Nam & si ambulauero in
medio umbre mortis: non timebo mala quoniã
tu mecũ es. Virga tua & baculus tuus: ipsa me
consolata sunt. Parasti in conspectu meo men
sam: aduersus eos qui tribulant me. Impin
guasti in oleo caput meũ: et calix meus inebri
ans quã preclarus est. Et misericordia tua subse
quetur me: omnibus diebus vite mee. Et vt in
habitem in domo domini: in longitudinem die
rum. Requiem eternã dona eis domine: et lux
perpetua luceat eis. ãn. In loco pascue ibi me col
locauit. ãn. Delicta. Psalmus.

Ad te domine leuaui animã meam: deus
meus in te cõfido non erubescam. Neq;
irrideant me inimici mei: etenim vniuersi qui su
stinent te non cõfundentur. Confundant omnes
iniqua agentes: superuacue. Vias tuas do
mine demonstra michi: & semitas tuas edoce me
Dirige me in veritate tua et doce me: quia tu es
deus saluator meus et te sustinui tota die. Re
miniscere miserationũ tuarum domine: & miseri
cordiarũ tuarũ que a seculo sunt. Delicta iuuẽ
tutis mee: et ignorantias meas ne memineris.
Secundũ misericordiã tuã memẽto mei tu: pro
pter bonitatẽ tuã dñe. Dulcis & rectus dñs: pro
pter hoc legẽ dabit delinquẽtib9 in via. Diriget

A page from a book of hours, printed on parchment by Antoine Vérard, Paris, 1508.
By courtesy of Messrs. Maggs Bros., London.



ORONTII

FINEI DELPHINATIS, REGII MATHEMATICARVM PROFESSORIS:

QVADRANS ASTROLABICVS, OMNIbus Europæ regionibus inſeruiēs: Ex recenti & emēdata ipſius Authoris recognitione in amplioré, ac longè fideliorem redactus deſcriptionem.

PARISIIS.
Apud Simonem Colinæum.
1534.

A famous page by Simon de Colines. Paris, 1534. Oronce Finé, Quadrans Astrolabicus. By courtesy of Messrs. Benn, London.

CRONICHE CHE TRACTANO DE LA ORI
GINE DE VENETI. E DEL PRINCIPIO DE
LA CITA. E DE TVTTE LE GVERE DA
MARE E TERRA FACTE IN ITALIA:
DALMACIA: GRECIA: E CONTRA
TVTI LI INFIDELI. COMPOSTE
PER LO EXCELENTISIMO ME
SERE MARCO ANTONIO SA
BELLICO. E VOLGARIZA-
TE PER MATHEO VE-
SCONTE DE SAN-
CTO CANCIANO.
CON GRATIA
ET PREVI
LEGIO.

A remarkable fine page by Gerardus da Ponte, Venice, 1500. By courtesy of Messrs. Benn, London.

A page by Girolamo Soncino, Rimini, 1522. Rabbi Albo Joseph, Sefer Ikkarim. Biblioteca Palatina, Parma. By courtesy of Ulrico Hoepli, Milan.

new art. His New Testament sold out in a few months, although the edition was no less than 5,000 copies.

Cranach supplied illustrations to some of his works, notably to the *"Passional Christi and Antichrist"* of 1531. Dürer, Germany's greatest master, composed several series of prints in which composition, treatment and technique were carried to an extreme: a "Triumphal Arch" for the Emperor Maximilian being a composition of no less than ninety-two separate pieces, measuring about ten feet by nine. Hans Burgkmaier is generally given the credit for the "Triumphal Car" of Maximilian, which consists of one hundred and thirty-five woodcuts, and measures over one hundred and seventy-five feet in width. The Herald of Triumph mounted on a griffin leads the enormous procession, and the whole vast work is dedicated to "The praise and everlasting memory of the noble pleasures and glorious victories of the most serene and illustrious prince and lord, Maximilian, Roman Emperor Elect and Head of Christendom, King and Heir of Seven Christian Kingdoms, Archduke of Austria, Duke of Burgundy and of other grand principalities", etc. etc. Printing evidently took its part in the flattery of princes.

Interesting both as regards the illustrations and the lettering is a book which relates the noble deeds of a squire, *"Theuerdanck"*, printed by Schönsperger of Augsburg in 1517. The woodcuts are by Hans Schäufelein; the typography was first thought to be block-book printing, then movable type was assumed to have been used, but of late it has been generally accepted that the ornamental letters were printed from wood and the text from movable metal type. Such matters, as we have stated, are not easy to determine. The book shows the German Gothic letter, the "Fraktur", in a very fine form.

Other masters, whose style of work was akin to Dürer's but who worked on a smaller scale or to smaller sizes, and were for this reason known as the *"Kleinmeister"* or Little Masters, were Springinklee, Schäufelein, Daniel Hopfer, Hans and Sebald Beham, Hans Baldung Grien, Virgil Solis, Jost Amman and Altdorfer, to name only the most outstanding illustrators of the 16th century. Cranach we have already mentioned; and we must now turn to that other great master, Holbein. He may be looked upon as representing a contrast to Dürer, restraint and simplicity rather than abundance of detail being the principal characteristics of his work. Most famous of al his prints is his Dance of Death, a series of small prints on the popular mediæval theme where Death comes to every man, to preacher and peasant, king and merchant, noble lady and child at play in the midst of their earthly toil or pleasure. The first edition dates from 1535, and the great series may be said to be the last important work of this brilliant period of the woodcut.

This great period seems to have exhausted Germany's powers in the field of book production for a long time. Few artists of later centuries

Der Schrifftgiesser.

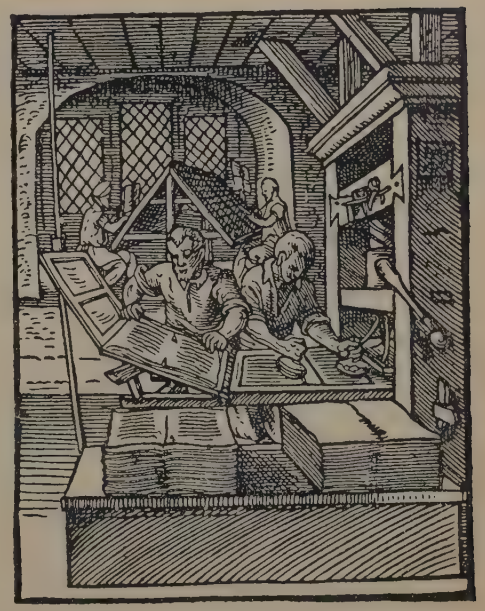
Ich geuß die Schrifft zu der Druckrey
Gemacht auß Wißmat/Zin vnd Bley/
Die kan ich auch gerecht justiern/
Die Buchstaben zusammn ordnierr
Lateinisch vnd Teutscher Geschrifft
Was auch die Griechisch Sprach antrifft
Mit Versalen/ Puncten vnd Zügn
Daß sie zu der Truckrey sich fügen.

Der

Ill. 38-39. Left: A typefounder in 1568. Right: A printer. From the same book, describing "all the professions in the world" ("Beschreibung aller Stände auff Erden") with rhymes by Hans Sachs. Woodcuts by Jost Amman, German, 1568.

Ill. 40. A decorative letter, cut in wood. Printed by Johann Zainer, Ulm, about 1473.

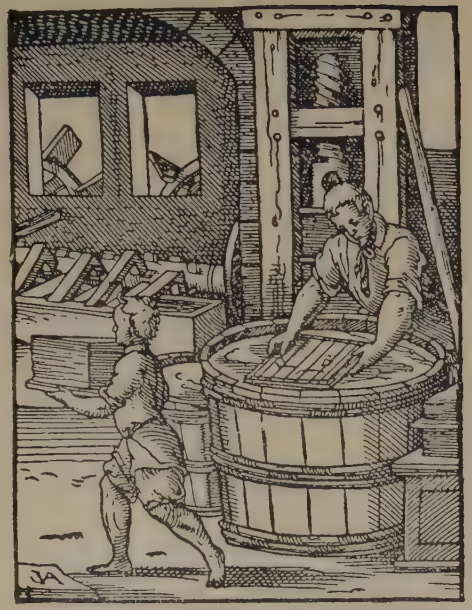
Der Buchdrücker.



Ich bin geschicket mit der preß
So ich aufftrag den Firniß reß/
So bald mein dienr den bengel zucke/
So ist ein bogn papyrs gedrucke.
Da durch kombt manche Kunst an tag/
Die man leichtlich bekommen mag.
Vor zeiten hat man die bücher gschribn/
Zu Meintz die Kunst ward erstlich triebn.

Der

Der Papyrer.



Ich brauch Hadern zu meiner Mül
Dran treibt mirs Rad deß waſſers viel/
Daß mir die zſchnitn Hadern nelt/
Das zeug wirt in waſſer einquelt/
Drauß mach ich Pogn/auff dē filtz bring/
Durch preß das waſſer darauß zwing.
Denn henck ichs auff/laß drucken wern/
Schneweiß vnd glatt/ſo hat mans gern.

Der

Ill. 41-42. A paper-maker (left) and a bookbinder (right) in 1568.
From the same book as ill. 38 and 39.

Ill. 43. (centre) Printer's device of Pierre Levet, cut in wood, 1490.

Der Buchbinder.

Ich bind allerley Bücher ein/
Geiſtlich vnd Weltlich/groß vnd klein/
In Perment oder Bretter nur
Vnd beſchlags mit guter Clauſur
Vnd Spangen/vnd ſtempff ſie zur zier/
Ich ſie auch im anfang planier/
Etlich vergüld ich auff dem ſchnitt/
Da verdien ich viel geldes mit.

Der

can stand comparison with these old masters. The engraver Chodowiecki (1726—1801) of Polish descent, must be mentioned. Later, drawings by Rethel and Menzel (1815—1903) were rendered in facsimile wood-engraving, but all these are more brilliant in draughtsmanship than important as works of art. Unger (d. 1804) was known for fine printing, but no real revival came before Morris stirred German artists to new life at the end of the 19th century. Walther Tiemann started this activity with his Janus Presse, and many others follow who do fine work both as regards printing and illustration. Of the private presses and their artists (a definition of the "private" press will be found in the chapter on "Printing in England") we must record: Prof. F. W. Kleukens (Kleukens Presse, Gutenberg Presse, Mainz; Ernst Ludwig Presse, Darmstadt); Prof. Ehmcke (Rupprecht Presse, Munich); Count Kessler (Cranach Presse, Weimar) who printed a "Hamlet" with engravings on wood by Gordon Craig, edited by J. Dover Wilson, which has been called "a magnificent piece of scholarship"; Dr. W. Wiegand (Bremer Presse, Munich); and Paul Koch, the son of Prof. Rudolf Koch, who has a press in Frankfurt-am-Main.

Excellent printing is being done by the Reichsdruckerei and by such firms as the C. H. Beck'sche Buchdruckerei, which we have had cause to mention already in connection with the reproduction of a miniature in this volume. Also by the Offizin Haag-Drugulin, Leipzic, which set some pages to be found in the appendix.

Typefounders such as Dr. Karl Klingspor in Offenbach and the Bauer Typefoundry have done much to further good printing, as the specially designed pages of their types in our appendix demonstrate. Also such firms as Stempel and Ludwig & Mayer employed the best artists to design their type forms: Erbar, Weiss, Tiemann, Rudolf Koch, Steiner-Prag, Paul Renner and others. Several of their designs are included in the appendix, as well as the "Trafton" script of Messrs. Bauer. Rudolf Koch's most important alphabets are: Deutsche Schrift, 1906—1913; Maximilian Gothic, 1913—1914; Maximilian Roman, 1913—1914; Koch Roman, 1920—1922; Neuland 1922—1923; W. Klingspor Schrift, 1923; Jensen and Wallau, 1924—1930; Kabel 1926—1930.

ITALY. In or about 1464 two priests, Conrad of Sweynheym (Schwanheim) and Arnold Pannartz who was born at Prague, brought the art of printing to Italy, and set up a press in the Benedictine monastery of Subiaco, near Rome, where several German monks were living, and where the Cardinal Turrecremata furthered science and art. (This John Torquemada, or de Turrecremata, was a Spaniard, but must not be confused with his nephew, the Inquisitor). Their first dated book was the "Lactantius", a very rare and famous work of which the Roman type became a model often followed by later printers. Although the German, Rusch, was the first in the field to print in Roman characters, it is from

the Subiaco books that these beautiful letters spread all over Europe.

We may record here a legend of Castaldi, born in or about 1398, who was a licensed printer in Milan, and who is said to have invented printing. Prof. Fumagalli of Florence, to whom we shall have occasion to refer again later, gives credence to this story to the extent of supposing that Castaldi "may have arrived on his own account at re-inventing it".

About 1467 another German, Ulrich Hahn of Ingolstadt, was printing in Rome where he produced the Cardinal's *"Meditationes";* whilst a fourth, Johann von Speyer (or da Spira) obtained a privilege as the first printer in Venice. He died a few months afterwards, and his brother Wendelin succeeded him. Other early printers belong to Venice: Ratdolt of Augsburg, Peter Löslein, and Bernhardt Maler formed a partnership in this city; then there are the brothers de Gregoriis, and a Frenchman, Nicholas Jenson, whose activities are of extreme importance (see Chapter I).

Jenson, born in Sommevoire on the Marne, medal engraver of the mint at Tours, was sent to Mainz to acquire knowledge of the printing technique there. Evidently he did not return to France, for he started printing in Venice in 1470. During the next year he printed a book in which through inadvertence one X is omitted from the date—an error which has caused rivers of ink to flow from the pens of historians, for there was the Doge's privilege of 1469, granted to Spira, conflicting with this date.

The glory of Venetian printing, however, is Aldus Manutius (Manuzio), a scholar who started printing in 1489. He founded his printing office with the primary object of producing flawless editions of the classics; he founded an Academy where he and his colleagues conversed in classic Greek; he created a new Greek character; was the first to print an entire book in italics (*cancelleresco);* and was the first printer to realize that smaller books were urgently needed and so he started a series of octavo editions. His most famous book is the *"Hypnerotomachia Poliphili"*, or The Strife of Love in a Dream, in which the delicate woodcuts, executed in pure outline without shading, harmonize exquisitely with the text. Dürer must have been among the admirers of this beautiful book, for the Munich Library possesses a copy which is inscribed by a later owner as having been acquired from the artist's collection in 1555. The 38 chapters have initials of great charm which form the name of the author and his beloved: *Poliam Frater Franciscus Columna peramavit.* No less than twenty-eight Greek works left Manuzio's press; and, after his death in 1515, his father-in-law and his sons continued his activities, one, Paolo, being called to direct the Vatican Press by Pius II.

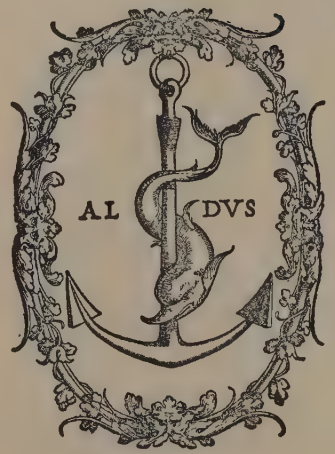
The Soncino Press (Pl. XII) was famous for Hebrew books. Nicolò de Lorenzo published the *"Divina Commedia"* of Dante in 1481, em-

LE RICCHEZZE

DELLA LINGVA VOLGARE

DI M. FRANCESCO

ALVNNO.



Con priuilegio di N. S. Papa Paolo III,
Et della Illustriss. Signoria di Vinegia.

IN VINEGIA.

NEL M. D. XXXXIII.

Ill. 44. Title page, showing the printer's device of Aldus Manutius, 1543.

POLIPHILO INCOMINCIA IL SECONDO LIBRO DI LA SVA HYPNEROTOMACHIA. NEL QVALE POLIA ET LVI DISERTABONDI, IN QVALE MODO ET VARIO CASO NARRANO INTERCALARIAMENTE IL SVO INAMORAMENTO.

NARRA QVIVI LA DIVA POLIA LA NOBILE ET ANTIQVA ORIGINE SVA. ET COMO PER LI PREDECESSORI SVI TRIVISIO FVE EDIFICATO. ET DI QVELLA GENTE LELIA ORIVNDA. ET PER QVALE MODO DISAVEDVTA ET INSCIA DISCONCIAMENTE SE INAMOROE DI LEI IL SVO DILECTO POLIPHILO.

TEMIE DEBILE VOCE TALE OGRAtioſe & diue Nymphe abſone peruenerãno & inconcine alla uoſtra benigna audiẽtia, quale laterrifica raucitate del urinante Eſacho al ſuaue canto dela piangeuole Philomela. Nondimeno uolendo io cum tuti gli mei exili conati del intellecto, & cum la mia paucula ſufficiẽtia di ſatiſſare alle uoſtre placeuole petitione, non riſtaro al potere. Lequale ſemota qualũque heſitatione epſe piu che ſi congruerebbe altronde, dignamente meritano piu uberrimo fluuio di eloquentia, cum troppo piu rotunda elegantia & cum piu exornata poli tura di pronũtiato, che in me per alcuno pacto non ſi troua, di cõſeguire il ſuo gratioſo affecto. Ma a uui Celibe Nymphe & adme alquãto, quan tũche & confuſa & incomptamẽte fringultiẽte haro in qualche portiuncula gratificato aſſai. Quando uoluntaroſa & diuota a gli deſii uoſtri & poſtulato me preſtaro piu preſto cum lanimo nõ mediocre prompto humile parendo, che cum enucleata terſa, & uenuſta eloquentia placẽdo. La priſca dunque & ueterrima geneologia, & proſapia, & il fatale mio amore garrulando ordire. Onde gia eſſendo nel uoſtro uenerando conuentuale conſpecto, & uederme ſterile & ieiuna di eloquio & ad tanto preſtãte & di uo ceto di uui O Nymphe ſedule famularie dil acceſo cupidine. Et ſi tanto benigno & delecteuole & ſacro ſito, di ſincere aure & florigeri ſpiramini afflato. Io acconciamente compulſa di aſſumere uno uenerabile auſo, & tranquillo timore de dire. Dunque auante il tuto uenia date, o belliſſime & beatiſſime Nymphe a queſto mio blacterare & agli femelli & terrigeni, & puſilluli Conati, ſi aduene che in alchuna parte io incautamente

Ill. 45 (centre) A page from the Poliphilus, printed by Manutius, Venice, 1499. This beautiful type has been revived by the Monotype.

Ill. 46. Printer's device of Plantin of Antwerp. The two legs of the compass symbolize labour and constancy, "Labore et constantia".

Ill. 47. Illustration by Gino Severini, frontispiece for the Italian edition of "Le cimetière marin", poems by Paul Valéry. By courtesy of the Istituto del Libro, Florence.

Ill. 48. Woodcut, also representing a scene under water, by David Jones. From "The Book of Jonah", 1926. By courtesy of the Golden Cockerell Press, London.

Specimen of present-day Italian printing. Notification of marriage, the design being composed of the basic form of the initials G, P, I and G. Designed and printed by Nicola de Arcangelis, Pescara.

Specimen of present-day Italian printing. Invitation card for the ceremony of the inauguration of the Littorio Bridge in the newly founded city of Pescara in regions reclaimed from the marshes. Designed and printed by Nicola de Arcangelis, Pescara.

bellished by woodcuts from designs attributed to Botticelli. In the official printer of the Holy See, the "*Stampatore Camerale*", Antonio Blado, we have another master printer. Rivals of the Aldus family for widespread activity were the Florentines Giunta, who also ran pressses in Venice and Lyons, Salamanca and Burgos.

After this intense and highly artistic early period, during which Italy could boast the largest number of cities where presses were at work, the same decline which we find in other countries occurs. Giovanni Battista Bodoni (1740—1813) is the man whose work spells a revival of tradition and something of progress as well. He perfected the style of lettering begun by Fournier in France and carried to an extreme by Didot of that country, the style of printing without much or any ornament and "modern face" type. Spain had in Ibarra (Pl. XIII) a master who worked on similar lines, but credit must be given to Bodoni for having produced the finest arrangements in black and white in his title pages (compare Baskerville, Pl. XVIII with illus. 50). He may be regarded as the creator of a more architectural style than any other man, and is for this reason the most "modern" of the older printers. The increasing contrast between light and heavy strokes in his lettering may be objected to, but its decorative values have inspired many artists since. In 1785 he produced a Homer, and in 1806 The Lord's Prayer in 155 tongues. The first edition of his "*Manuale Tipografico*" appeared in 1788, and contains 150 Roman and 28 Greek fonts; the second edition, published in 1818 after his death, gives us no less than 291 alphabets, all engraved by this great artist himself!

Present-day printing in Italy owes much to Raffaello Bertieri (Pl. XV), to the activities of Nicola de Arcangelis of whose work we have selected a few pages, included in the appendix, and two "display" cards of interesting and novel design. This printer, as the head of the printing organizations of the country, occupies a foremost place. Artists such as Gino Severini (illus. 47) and Bernardini whose excellent illustrations for "*Pinocchio*" and other children's books are also included in the appendix plates, are remarkable for their personality and powerful invention. Both Arcangelis and Prof. Fumagalli, the Director of the *Istituto del Libro* in Florence, have done much to win appreciation for the art of the book in contemporary Italy and abroad.

Fine and important books have recently been published by the Libreria dello Stato, Offizina Bodoni of Verona, Claudio Argentieri of Spoleto, whilst Ulrico Hoepli of Milan and Olschki of Florence are famous for scientific and historical works. The "*Palio of Siena*" (Pl. XV) is designed by Duilio Cambellotti. An innovator also is Carlo Frassinelli with his fine series of translations of foreign literature, and the "*Risorgimento Grafico*" of Milan, a printer's magazine, did much to raise the general standard of printing.

LES

GRACES.

Simplex munditiis *Horace*

A PARIS.

Chez LAURENT PRAULT, Libraire, Quai des Augustins, au coin de la rue Gît le Cœur à la Source des Sciences.

M. DCC LXIX.

Ill. 49. Left: Title page by Moreau le Jeune, 1769. Specimen of the richly ornamented style of the XVIIIth century.

ORATIO

DOMINICA

IN

CLV. LINGVAS

VERSA

ET

EXOTICIS CHARACTERIBVS

PLERVMQVE EXPRESSA.

PARMAE

TYPIS BODONIANIS

MDCCCVI.

Ill. 50. Right: Title page by Bodoni, showing the reaction, classic simplicity. "The Lord's Prayer" in CLV languages.

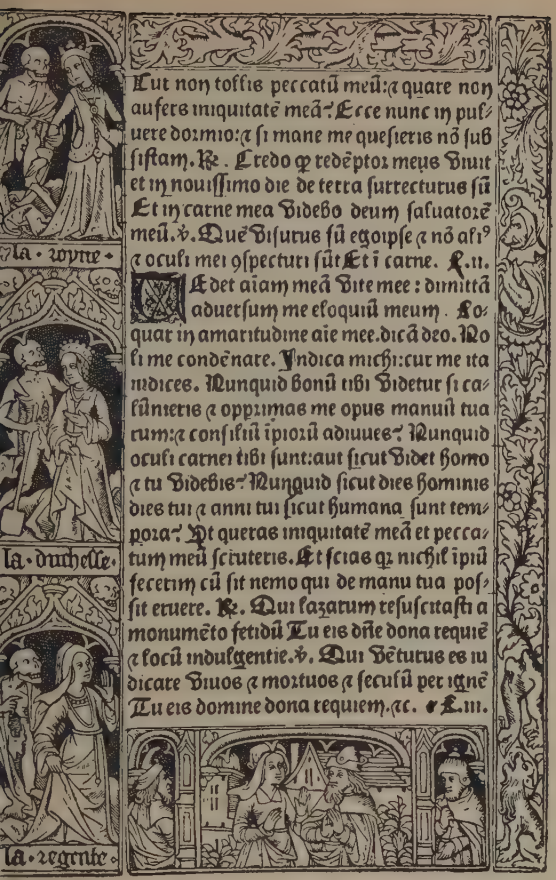
FRANCE. France also owes its first printing press to Germans, who came to Paris in 1470, having been invited by the authorities of the Sorbonne University. This institution, founded as early as the 13th century, still bears the name of its originator. Guillaume Fichet, prior, and Heynlin, librarian of the Sorbonne, directed the press, the craftsmen being Ulrich Gering of Constanz, and Martin Kranz and Michael Friburger, both citizens of Colmar. Heynlin acted as a corrector to the press, Fichet choosing the books to be printed.

But soon rival presses came into action. Guy Marchant printed from 1483, Antoine Vérard from 1485 (Pl. IX); then there are Pigouchet, Marechal, Thielman Kerver, Simon Vostre, principally renowned for their Books of Hours (*livres d'heures* or *horae*) richly ornamented with woodcut borders.

A group of three men at the beginning of the 16th century: Josse Bade (Badius Ascencius), Simon de Colines (Pl. X), and Geofrey Tory inaugurated a new period, closely connected with a family of great printers, the Estiennes. Tory we have already mentioned as the man who paved the way to Roman lettering. As the *"imprimeur du roi"*, bookseller, publisher and as an author he is equally interesting. He improved French spelling; he introduced the apostrophe being the first to write *l'eglise* instead of *leglise*, and to employ the cedilla Ç to differentiate from the C. He was also an excellent woodcut artist. Colines, who was the manager of Henri Estienne's works, married his widow. When Robert, the son of Henri, came of age, he took over the management, and his policy brought the firm into conflict with the authorities. A scholar, born in 1503, conversant with Greek, Latin and Hebrew, he published the New Testament and a Latin Bible which caused great disturbance. He was brought into court, and it was due to the intervention of the King, Francis I, who furthered printing as much as he could, that only the image of Robert Estienne was publicly burned and not the man himself. A new impression of the Bible,1545, made life in Paris impossible for the printer. He fled to Geneva where he became a Protestant and continued printing in partnership with Conrad Badius, a son of Josse.

The second Henri Estienne, the son of Robert, and his son Paul continued the family profession. Robert had had beautiful types cut by Guillaume le Bé and Claude Garamond, whom we have mentioned in our first chapter. These engravers and Robert Granjon also worked for Plantin, a Frenchman, who migrated to Antwerp.

In the second half of the 16th century French printing, in common with that of Germany, England and other countries, met with difficulties caused by the spread of Lutheran doctrine. A censorship was established which soon became a political as well as a religious one. The interest shown in printing by Francis I led to a continuous royal interest in typography, and in 1640 Cardinal Richelieu set up a royal printing office



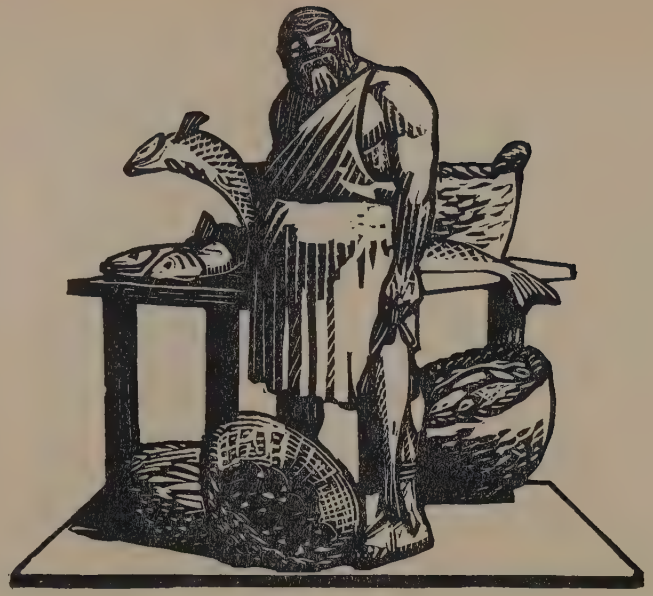
Ill. 51. Page by Pigouchet, 1488, with woodcut border in four parts.

Lentree de la Royne en la ville & Cite de Paris, Imprimee par le Commãdemẽt du Roy noſtre Sire.
On la vend a Paris en la Rue Sainct Iacques deuant Leſcu De Baſle, & deuant Legliſe de la Magdaleine, A Lenſeigne du Pot Caſſe. Auec Priuilege.

Ill. 52. Title page by Tory, 1531, showing his device, "Le pot cassé".

Ill. 53. Woodcut, self size, from Holbein's "Dance of Death", 1538.

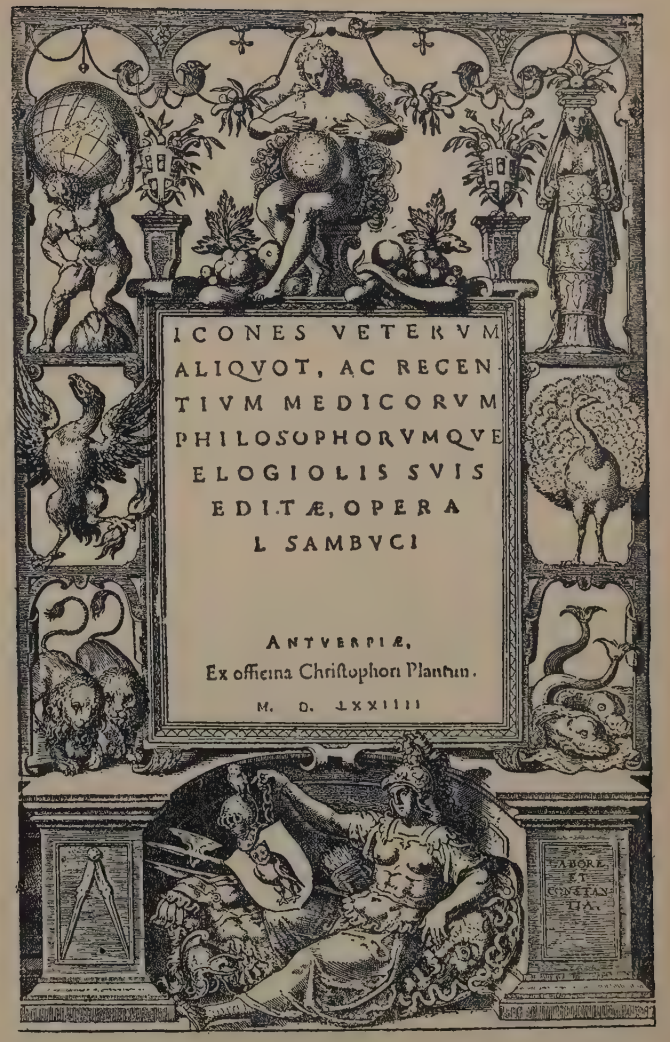
Ill. 54. Anonymus woodcut from a "Dance of Death", printed by H. Knoblochtzer, Heidelberg. about 1490.



LE DÉJEUNER MAIGRE ET SON DESSERT

COURS, *Démétrius, achetez à la halle, chez Amynthas, trois perches de mer, dix sardines, deux douzaines de crevettes (qu'il te les choisisse lui-même!); et reviens vite, dès*

Ill. 55. Page, printed in black and orange, by Léon Pichon, Paris. Woodcut by Carlègle. From "Les plus jolies roses de l' Anthologie Grècque cueillies par Gabriel Soulages". The type is Deberny Nr. XVIII italics. Published by Léon Pichon, Paris.



Ill. 56. Title page by Plantin, Antwerp, 1574.

Ill. 57. Printer's device of André Bocard, Paris, 1500.

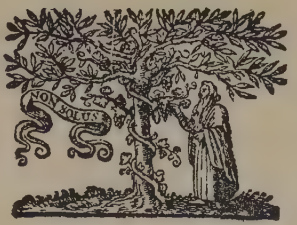
TRACTAET

tegen de

GIERIGHEYT.

Door

Ludovicum de Dieu.



Tot Leyden,

ter Druckerije vande Elseviers,
Anno 1643.

Ill. 58. Title page, the Elsevier Press, Leyden, 1643. The only copy known (self size of the book).

Ill. 59. Printer's device of Andrew Millar, Edinburgh's first printer, 1507.

in the Louvre. Garamond's types went there, and those of Le Bé and Granjon. In 1692 the king, Louis XIV, ordered a *"Romain du Roi"* to be made. For this purpose a committee was appointed, which produced letters drawn upon a field of 2304 small squares—evidently to give the king's roman all the care a king could desire. Grandjean engraved the alphabet which shows a stronger contrast between thick and thin strokes than the older designs, and is a prelude to the forms of Didot in its inclination to angular contrasts.

No doubt the development of French engraving influenced both the forms of letters and the abundance of ornament typical of 18th century printing in that country. Engravers such as Mellan, Nanteuil, Edelinck and Cochin, draughtsmen like Boucher, Fragonard, and Saint Aubin provided illustrations for the works of Molière (Boucher, 1734) or the Fables of Lafontaine, in place of such famous productions of the previous century as Thomas à Kempis' *"Imitatione"* of 1640 or the Bible of 1642. Plates XIV, XXXVIII and XXXIX show the application of engraving and etching to book illustration, which became more and more elaborate with *"fleurons"*, *"cul de lampes"*, *"en têtes"*, etc.

Reaction came with the Didots whose lettering is shown in the appendix pages from that famous firm of Paris typefounders, Messrs. Deberny-Peignot. Fournier had been the first to have the idea of using numbers instead of names to indicate the size of type faces; Didot improved on this and produced a scheme which was adopted all over Europe. He also paved the way of stereotyping, calling his system "Polytypage". Benjamin Franklin visited Didot in 1780.

Present-day French printing is shown in the fine specimen by Messrs. Malherbe of Paris *"La Jeune Tarantine"* a poem by Chenier with colour woodcuts by Jean Droit. Good commercial work is done by such firms as Coulouma of Argenteuil, or Pelletan; whilst the Imprimerie Nationale has given all its care to impressive works of scientific character.

The man who has produced the *"Typographie pure"* and aimed at unalloyed typographic beauty is Léon Pichon of Paris. He never prints large editions and shows a preference for literary works such as those of Dante, of Poe, of Ovid. A specimen page of the *"Metamorphoses"* is included in our appendix, another of his pages is reproduced in illus. 55. Engravings on copper have been done by Laboureur in a cubistic vein, and fine woodcuts have been done by Carlègle, Roubille, Paul Véra, Dufy, Morin-Jean.

THE NETHERLANDS. After the first period already referred to, the Netherlands continued to show great activity in printing. Gerard Leeu of Gouda printed in that town, and later at Antwerp; Peter van Os worked in Zwolle; Pafraet of German origin also had a press in Deventer in the Northern Netherlands, his compatriot, John of Westfalia, going to Alost in the South and setting up his press in collaboration with Thierry

PRIMERA PARTE
DEL INGENIOSO HIDALGO
DON QUIXOTE
DE LA MANCHA.

CAPÍTULO PRIMERO.

Que trata de la condicion, y exercicio del famoso hidalgo Don Quixote de la Mancha.

En un Lugar de la Mancha, de cuyo nombre no quiero acordarme, no ha mucho tiempo que vivia un hidalgo de los de lanza en astillero, adarga antigua, rocin flaco, y galgo corredor. Una olla de algo mas vaca que carnero, salpicon las mas noches, duelos y quebrantos los sábados, lantejas los viernes, algun palomino de añadidura los domingos consumian las tres partes de su hacienda. El resto della concluian sayo de velarte, calzas de velludo para las fiestas con sus pantuflos de lo mesmo, y los dias de entre semana se honraba con su vello-

Title page by Joaquin Ibarra, 1780. By courtesy of Messrs. Benn, London.

Detail from a title page, Paris, 1752. Both the lettering and the ornamentation are engraved in copper. A reaction against this almost too ornamental work was effected by Baskerville (Pl. XVIII), Ibarra (Pl. XIII,) Didot (appendix) and Bodoni (ill. 47).

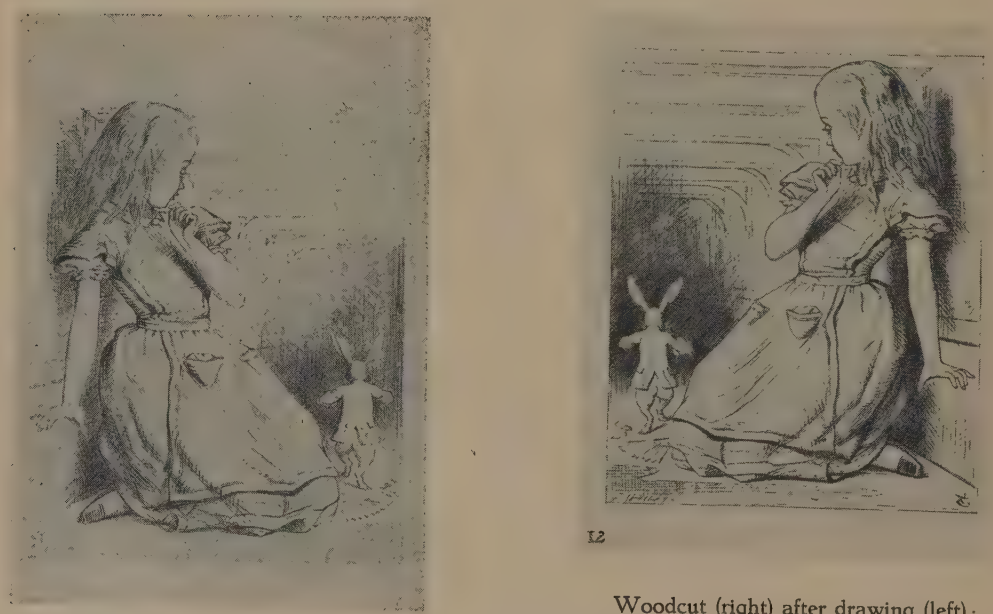
il cantastorie di campari
l'amor geloso
quanti otelli ci son sotto le stelle!
non tutti mori, che la gelosia
prescinde dal colore della pelle.
non le importa se bianca o rossa sia.
Cabano oppur di zafferano
come il risotto illustre di milano.
è un mal d'ogni paese e d'ogni clima.
chi ne soffre non vive che in sospetto.
ora è un dubbio sottil che il cuor gli lima.
ora è una fiamma che gli brucia il petto.
ahi più il vero dal falso non discerne.
e lucciole egli piglia per lanterne!
qualche volta lanterne son davvero:
ma assai più spesso un'ombra evanescente,

A page by Raffaello Bertieri, Milan, 1933, printed in orange, grey and black.

Title page by Cambellotti, Società Editrice di Novissima, Rome.

HET LOF DER
ZEE-VAERT
Al wat bepeckt beteert aengrijpen kan, en vatten,
En dansen op de koorde, en klauteren als katten:
Zeespoocken, die gheswind den steyln mast op vlieght,
En zijt in Thetis schoot van kindsbeen opgewieght;
Bolckvangerdragend gild, en blaeuwe roppershoeden,
Die koorsen haelt op 't land, en lucht schept op de vloeden:
Stuurluyden grijs van kop, die liever rijst, en sinckt
In 't bedde vande Zee, als in de pluymen sinckt:
Ghy Schippers die niet lang aen eenen oord kond rusten,
En 't ancker licht, en worpt aen veergheleghen kusten
En al wat binnens boords, van schuym en pekel soor,
Nu ommeweghen soeckt, nu houd een rechter spoor,
Verselschapt myne reys, en voorghenomen bevaert,
Die ick gheheylight heb den lof der nutte Zeevaert.
Sint Laurens, niet die eer gheroert was, en ghebraen,
Maer voormaels as als Vroegd nae Indien ghegaen,
Begunstige onsen tocht; want hy is omgedragen
Op 't grondeloose vlack door stormen, en door vlagen:
Hy wenckt ons toe alreede, en blyft versekeraer
Te vryen onsen kiel van schipbreuk, en ghevaer.
Van wie de Zeevaert eerst ghenoten heeft haer luysier
Tot noch hangt in gheschil, en d'ourdheyd maecket duyster.
Wat volck de Zeekust vrijt, en handelt aen het strand.
Treckt uyt dees vindingh lof, bysonder Greckenland.
Dat op syn Argo trotst, en op syn Argonauten,
En Tiphys, die de Zee te kruyssen sich verstouten
Om winnen 't gulde vlies: doch Tyrus hier om lacht,
Die eerst een holle balck te water heeft gebracht.

The Praise of Sea-faring, by Vondel, 17th century Dutch poet. Printed by A. A. M. Stols, Maastricht, Holland, 1923. Original woodcut by the Dutch artist Henri Jonas.



Woodcut (right) after drawing (left).

Illustration from "Alice in Wonderland", the design and the woodcut made from it, 1865. By courtesy of Messrs. Macmillan & Co., London.

Martens. Plantin, most famous of all the Netherland printers, was a Frenchman by birth. His masterpiece was the Polyglot Bible, in Hebrew, Greek, Latin, Syriac and Chaldee. This work meant the greatest financial and scientific effort. The king of Spain, who was instrumental in its production, sent scholars like Montanus to Antwerp to work upon the text, but failed to send the money he had promised, and meantime Antwerp was sacked by his troops. One of Plantin's sons-in-law was Moretus, and the scholarly Moretus family carried on the business after Plantin's death. They were knighted in the 18th century and in 1876 the entire printing office, together with the most valuable library, archives etc., were taken over by the State and the City of Antwerp for 1,200,000 francs and retained in its original state as a unique public museum. The present Curator is Prof. M. Sabbe who devotes a chapter of this book to the work of the great printer. Plantin carried on a French branch in Paris and a Spanish one at Salamanca. Between 1583 and 1585 he fled and printed at Leyden for the University, and in this bulwark of rebellion against the Spanish oppression another son-in-law, Van Ravelingen, continued his work after Plantin's return to Antwerp.

In quest of freedom of thought and religion many fled from the Southern Netherlands held by the Spanish troops to the North which had gained independence after 80 bitter years of war. One fugitive from Louvain, Louis Elsevier by name, beginning as a bookseller, was the founder of a firm which made Holland famous by the publication of innumerable classic works and the fine printing in which the Elsevier Press excelled. His grandsons, Isaac, Abraham, Bonaventura and Jacob, are the glory of this industrious family, printers to the Leyden University. Small formats (duodecimos) were the speciality of their productions. The firm existed till 1655 in Amsterdam and till 1680 in Leyden, and their name has become a byword for excellent printing all over the world.

Joan Blaeu (Blavius) was renowned for atlases, a service of great value to the rising Dutch Republic. Hugo Grotius and other great men gave him their still famous manuscripts. Another family of printers from the South are the Van Waesberge. They left Antwerp and went to Rotterdam in 1593 or earlier, and soon had offices in Amsterdam, Dantzig, Utrecht and Breda. Atlases and poetry, Ovid and Vauban's standard work on Fortifications, and Hugo Grotius's *"De Jure Bellis"* came from their press. Van Waesberge was appointed the official printer of Rotterdam, where the firm still exists. In our appendix a reproduction of a title page of a Bible will be found, the original of which was printed in 1612 and the reproduction in 1934 by the same firm.

As elsewhere in Europe it was the influence of William Morris which brought about a revival. Several artists followed his footsteps: Der Kinderen, who employed lithography, Dijsselhoff, Veldheer, Lauweriks and others who took to the woodcut. Later Edzard Koning employed

the stone for illustrating, but soon the importance of new type forms was realized.

De Roos was the first to design new type, the general improvement of printing was mainly due to his influence, and notable work came from his private press the "Heuvelpers" also.

A group of poets, Van Eyck, Greshoff and Bloem, whom the book-lover Van Royen joined, published some fine books printed by Messrs. Enschedé. These went under the name of "De Zilverdistel". Later the press became a personal one entirely, under Mr. Van Royen, who changed the name to "Cunera Press". One of his beautiful pages may be seen in our appendix. His work ranks highest in recent Dutch book production. Lucien Pissarro designed the "Distel" type for Van Royen's press in The Hague.

The Haarlem firm of Enschedé, printers and typefounders, existing since 1703, have bought the various older Dutch type-foundries one after another. Fleischman, type-cutter in their workshops till his death in 1768, designed some twenty alphabets for them, which were partly copied by Fournier and referred to by this Frenchman as the "*Goût Hollandois*". The house of Enschedé, where the highest possible standard has always been the aim, became the very centre of typography in Holland and Belgium, the latter country having no typefounding of its own. J. van Krimpen, the present adviser and designer, must be praised for his "Palladium" and other books. To the types designed by him and De Roos we have already referred in our first chapter. Messrs. Enschedé, apart from printing several editions for other publishers as well as their own publications, produced the books which the "Joan Blaeu" Society edited —a body which tried to rouse an interest in fine printing, and unfortunately had but a short life.

The general standard of printing in Holland reached a high level. A. A. M. Stols and Chas. Nypels are excellent typographers: a page from one of Mr. Stols's books is reproduced on Pl. XVI. Numerous artists have contributed woodcuts in a great variety of styles: Franken, Jonas, Mees, Bulder and others. Wijdeveld, an architect, must be given credit for putting entirely new ideas into practice in editing the architectural monthly "*Wendingen*". The text is no longer placed in a margin which acts as a frame, but the double page opening is looked upon as a composition in printed areas and rest spaces, grouped architecturally in blocks and squares. A serif-less letter was essential for such lay-out, which certainly gives beautiful, though not always legible results. The larger display type was elaborately built up with pieces of "rule" as printers call the type-high brass used in printing plain lines. The refreshing challenge of this experiment was of great value when printing was tending to become a repetition of the work of old masters under the influence of Morris.

In Flanders Morris also stirred the artists to new life. De Bom

wrote a little book about him which furthered the understanding of his ideals. Henri van de Velde started a magazine, *"Van Nu en Straks"* (Of the Present and the Future) in 1893. Later he directed the Cranach Press for Count Kessler in Weimar. Also Jules de Praetere and Charles Doudelet were among the pioneers of the revival; Elskamp, Reckelbus and the "Lumiere" editions followed. Another Antwerp firm, The Standard Boekhandel, published fine books; but of late years it is especially De Sikkel of the same town, who stands unrivalled for noble modern books. Artists such as Minne, Van Straten, Cantré, Stuyvaert and Lijnen do many woodcuts for such publications; whilst another Flemish master of the gouge, Masereel, mainly illustrates French books. Some of these artists are represented in our illustrations. From one quite recent book with colour-woodcuts by Mark Severin we show four specimens especially printed by the publisher, De Sikkel of Antwerp. The Studio Novio (J. Leonard) of Brussels must be mentioned for its daring and novel designs.

Beautiful books have been produced of recent years in Scandinavia, Czecho-Slovakia and Russia. In the U.S.S.R. especially, where new ideas were more readily accepted than elsewhere, many daring experiments have been made, and in particular interesting children's books have been produced. Modern Russian printing has greatly influenced work in Germany and Holland.

Woodcut by Victor Stuyvaert

CHAPTER IV

PRINTING IN ENGLAND, HISTORICAL AND CONTEMPORARY

England, where the average present-day printing stands on a higher level than in other European countries, although Germany and Holland follow closely, owes its first press to a mercer, William Caxton. Little is known about him; as little as about most other early printers. He was born about 1420 in the Weald of Kent, and travelled much in Holland, Zealand, Brabant and Flanders. There is no doubt he had a vivid literary interest. He started to translate into English a book by Raoul le Fèvre, Chaplain of Philip of Burgundy, called, *"Le Recueil des Histoires de Troye"*. But soon he found that his eyes, "myn eyen", were dimmed "with overmoche lokying on the whit paper," and his hand was crippled with writing. Thereupon he undertook to learn the art of printing in Cologne, and eventually started to print in collaboration with Colard Mansion in Bruges. It is interesting to hear his comment on the remarkable and new process. "This book," he says, "is not wreton with penne and ynke as other books ben, but emprynted as ye here see" (in a single day!) "Begonne in oon day and also fynysshed in oon day." Miscalculation of the time element in printing would thus appear to have been invented with the art itself.

Caxton entered the service of Margaret, sister of Edward IV of England and wife of Charles of Burgundy, becoming her secretary. The court of the Dukes of Burgundy was always a centre of art and of fine books. Plate V shows a scribe of Margaret's father-in-law. Margaret herself was keenly interested in literature and was a lover of books. It was in 1472 that this English business man and scholar, after his preliminary training as a printer in Germany, collaborated with Mansion on whose handwriting his first type was modelled. The "Recuyell", the first book printed in the English language, was produced by them two or three years later. In 1476 another translation followed: *"The Game and Play of the Chess Moralized"*. A second type was cast in Bruges, and Caxton brought this over to England that same year, when he set up a press in the Almonry of Westminster Abbey. He brought with him to the enterprise Wynkyn de Worde, a Frenchman born in Lorraine, and these two printed the first book in England, the *"Dictes and Sayengis of the Philosophres"*, dated November 18th, 1477. Then followed Poems by Chaucer, Gower, Lydgate, Malory's *"Morte d'Arthur"*, the *"Golden Legend"* a collection of the lives of the saints, books of hours, a Psalter, etc. We show a page of his illustrated "Aesop's Fables" in which the prints were copied from the 1477 German edition.

FREE PUBLIC LIBRARY WESTFIELD, N. J.

Ill. 60. Printer's device of William Caxton, composed of his initials and his master's mark (centre). From "St. Jerome, Lives of the Fathers", Westminster, 1495. By courtesy of Messrs. Maggs Bros., London.

For this pioneer printing would appear to have been an enthusiasm rather than a profitable undertaking. He says: "I have practysed and lerned at my great charge and dispense to ordeyne this said book in prynte after the manner and form as ye may here see." He printed, or had printed, nearly a hundred books, which was not a great achievement in comparison with contemporary continental printing, but we should remember that no less than twenty-five of them were his own translations. Wynkyn de Worde was his successor when he died towards the end of 1491.

Meanwhile Theodore Rood, a German from Cologne, had set up a press at Oxford, and in 1478 printed the first book there, the "*Expositio*". In 1480 the city of London saw the starting of its first press under John Lettou, also a printer from the Continent, in this instance the Southern Netherlands. Two years later he was joined by Wilhelmus of Malines in Flanders. In or about 1490 his stock was taken over by Richard Pynson, again a foreigner, a native of Normandy. He was appointed printer to Henry VIII, his first book being a reprint from Caxton's Chaucer. Certain borders of his books are evidently copied from those of Holbein printed by Froben a few years earlier, as details such as the hills in the background in the "Mutius" scene clearly indicate. The Roman letter made its first appearance in one of Pynson's books, Richard Page's "Oratio" of 1518. Pynson died in 1530.

In his place as the King's Printer Thomas Berthelet was appointed, but John Day is generally looked upon as the best English printer before 1600. He designed and cast the first Anglo-Saxon type, and was favoured with the patronage of Archbishop Parker. London could boast other printers: Vautrollier, a Frenchman, Henry Denham, and Field, the printer of Shakespeare's first work "*Venus and Adonis*". Before 1500 only two towns in the provinces had presses at work.

John Siberch—Johann Laer of Siegburg near Cologne, to be precise —set up a press in Cambridge in 1521; and with slight interruptions, the important publications of this university have continued for more than 400 years till the present day. Hugo Goes, evidently a Dutchman, began printing in York in 1507. In 1557 the spread of printing in the provinces received a check when a charter was granted to the Stationers' Company of London forbidding all printing elsewhere. It was 1583 before Cambridge began to print again, and 1585 when Oxford restarted.

Walter Chepman and Andrew Miller were granted permission in Edinburgh to print "Mess bukes efter our awin Scottis use", and other works in 1507. Miller's device, a play on his name, is reproduced (ill. 59). The first printer in Ireland was an Englishman, Humphrey Powell, whom the Dublin authorities had encouraged to come across by a gift of twenty pounds. The earliest book printed in Ireland was a Prayer Book of 1551.

CHAP. I.

The creation of Heauen and Earth, 3 of the light, 6 of the firmament, 9 of the earth ſeparated from the waters, 11 and made fruitfull, 14 of the Sunne, Moone, and Starres, 20 of fiſh and fowle, 24 of beaſts and cattell, 26 of Man in the Image of God. 29 Alſo the appointment of food.

IN* the beginning God created the Heauen, and the Earth.

2 And the earth was without forme, and voyd, and darkeneſſe was vpon the face of the deepe: and the Spirit of God mooued vpon the face of the waters.

3 And God ſaid,* Let there be light: and there was light.

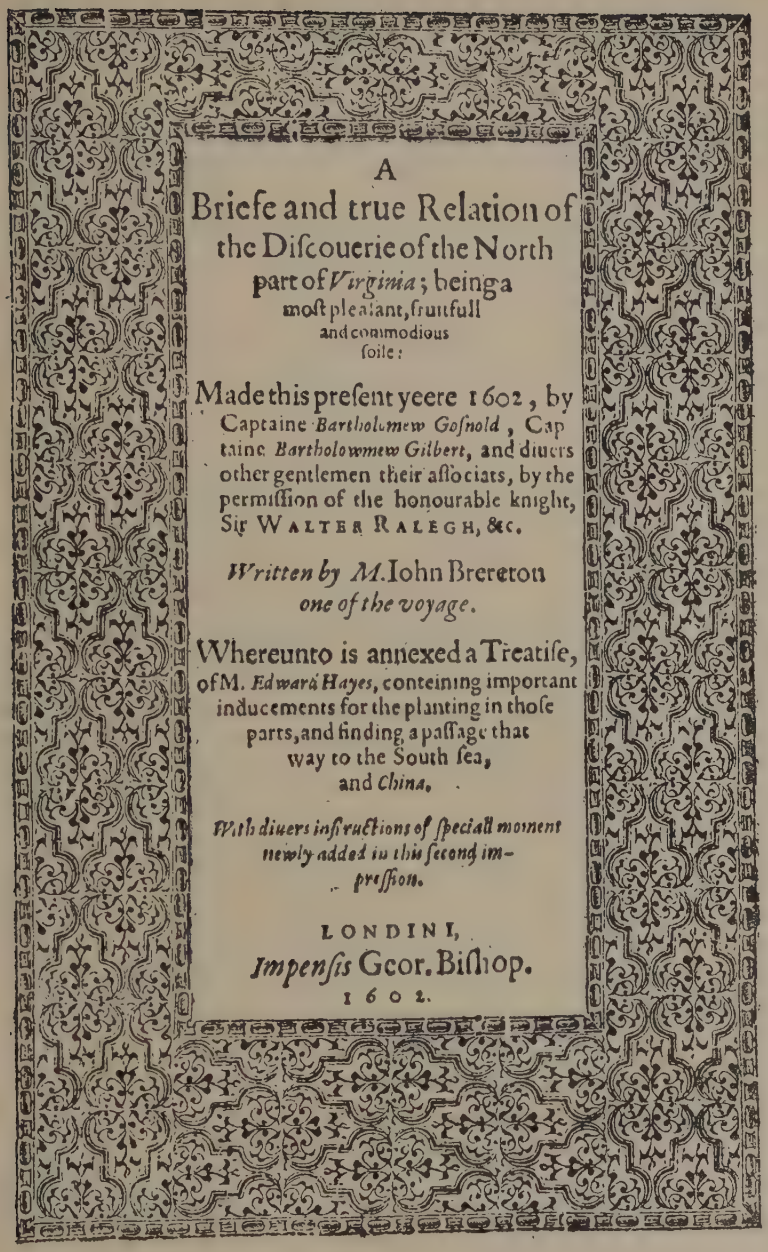
4 And God ſaw the light, that it was good: and God diuided † the light from the darkeneſſe.

Ill. 61. The First Authorized Version of the English Bible, 1611.
By courtesy of the British Museum.

Seventeenth century printing is not marked by especially fine works. For title pages ornamented borders such as the one reproduced from "*The Discoverie of Virginia*" of 1602 were often used. The first Authorized Version of the Bible appeared in 1611, and was printed by Robert Barker, the King's Printer at that time. In this, roman, italic and black-letter types were brought together in a pleasing synthesis, as may be seen from our reproduction. The production of Bibles did not always bring blessing to the early printers. We have referred to the monetary difficulties with Gutenberg's Bible and Plantin's "Polyglotta"; and Barker, who borrowed money from Bonham and John Norton as well as from John Bill, soon got into difficulties with these men and ultimately died in a debtor's prison. Bonham Norton was soon in prison also, and was disgraced as well, his crime being that of libelling the Lord Chancellor.

Bill, an apprentice to John Norton, to whom he was introduced by Sir Thomas Bodley, bought books abroad for this famous collector. It was in other countries also, particularly in France and Flanders, that many English books were printed both in the 16th and 17th centuries. Shakespeare's first folio was printed by Isaac Jaggard in 1623, but was not a notable production. Again the art was hampered, this time by a decree of the Star Chamber of 1637 which limited the number of London printers to twenty, only Wardens of the Company of Stationers being allowed more than two presses. Moreover no carpenter or joiner was permitted to construct a press without special licence. A strong censorship was effected by the churchmen and the chancellors of the universities. The Civil War completed the work of making English printing of little importance for the time being, and for a long period the type was Dutch or was copied from Dutch examples.

Oxford, where printing had ceased and recommenced twice, where endless struggles were carried on against the London Stationers as to the right to print Bibles, obtained from Dr. John Fell a valuable gift of matrices type, punches, and presses which he had purchased in Holland. Typefounding was started there in 1667 by Peter Walpergen, a Dutchman from Batavia who was also brought to Oxford by Fell. Hebrew, Arabic, Saxon, Armenian, Coptic, Slavonic and Samaritan types were ultimately bought, and Francis Junius gave his Gothic, Runic, Icelandic and Anglo-Saxon punches. The Oxford University Press introduced the first cylinder machine in 1836; the Wolvercote Paper-mill was purchased in 1870; and since that time Oxford printing has been an unbroken crescendo of achievement, such works as the New English Dictionary (known as the Oxford Dictionary) winning world-wide recognition. One of the most remarkable books printed by the Oxford University Press is "*Philobiblon*" by Richard de Bury, a sixteenth century book lover. Both Oxford and Cambridge Presses have developed into institutions of great importance.



A
Briefe and true Relation of
the Diſcouerie of the North
part of *Virginia*; being a
moſt pleaſant, fruitfull
and commodious
ſoile:

Made this preſent yeere 1602, by
Captaine *Bartholomew Goſnold*, Cap
taine *Bartholowmew Gilbert*, and diuers
other gentlemen their aſſociats, by the
permiſſion of the honourable knight,
Sir WALTER RALEGH, &c.

Written by M. Iohn Brereton
one of the voyage.

Whereunto is annexed a Treatiſe,
of M. *Edward Hayes*, conteining important
inducements for the planting in thoſe
parts, and finding a paſſage that
way to the South ſea,
and *China*.

*With diuers inſtructions of ſpeciall moment
newly added in this ſecond im-
preſſion.*

LONDINI,
Impenſis Geor. Biſhop.
1602.

Ill. 62. A title page by George Bishop, London, 1602. From John Brereton, "Discouerie of Virginia". A very rare and costly volume. By courtesy of Messrs. Bernard Quaritch Ltd., London.

The first account of typefounding processes in England is given in Moxon's *"Mechanick Exercises, or the Doctrines of Handy-works applied to the Art of Printing"* in 1683; but the first record of a foundry we find in the Index to the Court Books of the Stationers' Company in 1597. The 1637 decree of the Star Chamber also ordered: "That there shall be foure Founders of letters for printing allowed, and no more". Milton's pamphlet concerning divorce having been published without licence, a search for the printers was started. Whereupon Milton wrote his magnificent *"Areopagitica, a Speech for the Liberty of Unlicenc'd Printing, To the Parliament of England"* (1644). There was not much liberty of the press then!

The result of these and similar regulations and restrictions was that "until William Caslon started his letter-foundry in 1720 the history of type founding in England had hardly begun". But whereas the founder Caslon—the name is of Spanish origin, Caslona, abbreviated in English pronunciation—should be honoured for his initiative, which brought to an end the necessity for the printing of English books abroad and the importation of type from Holland, it is Baskerville who must be praised as an innovator in typography. One of his stately yet simple title pages is shown on Pl. XVIII. He would not allow any ornament to distract from the essential shape of his letters. This style, started by him, was supported by Ibarra, the royal printer of Spain (1726—1785), and by the great Frenchman, Didot, and was carried to perfection by the Italian Bodoni. Pl. XIII shows Ibarra's most famous book, the *"Don Quixote"*.

However, his countrymen, conservative as ever, gave Baskerville little thanks; indeed, he met with a fiery antagonism. Mr. W. D. Orcutt quotes from one of his letters to Benjamin Franklin: "I must starve had I no other dependence". Baskerville, who failed with a Greek alphabet cut for the University in 1758, was perfectly successful with his roman fonts. As a writing master he knew exactly what a roman should be; and as a man endowed with an inventive mind he created a novel letter, having seen Caxton's and been stirred to rivalry by it. He also desired a smoother surface to his paper to give full value to his serifs; and he is credited with having invented the "wove" paper which shows no lines from the paper-maker's mould, and further with having it hot-pressed to ensure a perfectly smooth surface on which his type would show to greater advantage.

For the Cambridge University he printed a series of now famous works: a Virgil in 1757, Milton's Poems in 1758, a Bible in 1763, and a folio of Ariosto's *"Orlando Furioso"* with forty-seven engravings. His type, however, was criticized in his own day in his own country, but was appreciated in France and after his death was sold to the French *Société Littéraire-typographique*. Benjamin Franklin must be mentioned among his fervent admirers, but he had many equally fervent enemies.

no dede ne fere no thynge/ For I ſhalle not accuſe the/ For I ſhalle ſhelve to hym another way/ And as the hunter came/ he demaunded of the ſheepherd yf he had ſene the wulf paſſe/ And the ſheepherd with the heed and of the eyen ſtedfaſtly to the hunter the place where the wulf was / & with the hand and the tongue shelved alle the contrarye / And in continent the hunter vnderſtood hym wel / But the wulf whiche perceyued wel all the fayned maners of the ſheepherd fledd awey/ ¶ And within a lytyll whyle after the ſheepherd encountred and mette with the wulf/ to whome he ſayd/ paye me of that I haue kepte the ſecrete/ ¶ And thenne the wulf anſwerd to hym in this maner : / I thanke thyn handes and thy tongue/ and not thyn hede ne thyn eyen / For by them I ſholde haue ben betrayd/ yf I had not fledde awey/ ¶ And therfore men muſt not truſte in hym that hath two facys and two tongues/ for ſuche folke is lyke and ſemblable to the ſcorpion/ the whiche enoynteth with his tongue/ and prycketh ſore with his taylle

Ill. 63. A page by Caxton (reduced). From "Aesop's Fables", "translated out of Frensshe into Englysshe by William Caxton", 1483.

Ill. 64. Wood-engraving by Thomas Bewick. From Somerville, "The Chase", London, 1796.

Heir followis ane tractat of a part
of ye Ynglis Cronikle, ſhaw-
and of yar kings part of
yar ewill & curſit
governance.

Delamekle as we haue ſene and wndirſtāding zour falſs and fenzeit writ that ze call ane cronikle, in ye quhilk yaj mak zow to ſchaw ye defalts of our Scotts nacioun, and yat certane of our kings ſuld haf maid homage vnto zour kings of Ynglande, the quhilk is weray falſs in ye ſelf, as baith our cronikles and zours bers expreſs witneſs, to ye quhilk ze ſall be anſwerit as effers.

Yat our kings maid homage vnto ȝ kings of Ynglande is weray falſs.

Item, In ye firſt we wndirſtand how ze ar cūmyn of Brut, yat is ye maſt faltyt pepill of all ye warld, yat was ye treſonable trators of Troye, of quhais wikit falſs deids all ye warld reids, and will do vnto ye end ℔. And we ar cūmyn and diſcendit of ye maſt noble peple yat ever was i all ye warld, baith of our manhed and treuth, that is, of ye noble Grekȝ yat we ar cūmyn of on ye mānis ſyd. And attour to

Ye Scotts ar diſcendit of ye nobil Grekis. Ye Ynglis of ȝ treſonable trators of Troye & ye devill.

A ij mak

Ill. 65. A page from Alexander Boswell's Auchinleck Press, Dumfriesshire, Scotland (1815-1818). From Ransom, "Private Presses".

Between these factions a fierce controversy raged as to the superiority of his or Caslon's type, a controversy which seems remarkable to us as they were so much alike. His innovations were considered to be injurious to the eyesight; but time the arbitrator has justified them, for his type still survives as a fine letter.

John Bell, on whom Mr. Morison wrote a monograph, is given the credit for having created the first "modern" type face and for having abolished the "long" s — an asset on the side of greater legibility. His roman resembles that of Baskerville, and is one of the recent Monotype revivals.

The eighteenth century closes with Boydell's Shakespeare, printed by William Bulwer in a type based on Baskerville's.

Early in the 19th century Sir Alexander Boswell's "Auchinleck Press" must be mentioned as one of the glories of Scotland. His "*Yngliss Cronikle*" (of which we reproduce a page) will winn more recognition in 1935 for its printing than for saying that "Ye Scots are discendit of ye nobil Greeks, ye mast noble peple yat evir was in all ye world. Ye Engliss of the tresonable trators of Troye and ye devill", which may have been more readily believed in 1815—1818. Then the dark ages to which we have referred in the first chapter produced printing as ugly in England as elsewhere. The importance of William Morris's revival can only be fully judged if we compare his pages with what we can now term "Pre-Morris" printing, of which we give some specimens in illustrations 17—20. Like Baskerville and Caxton before him, Morris was not a printer or a type designer originally; he started printing because of his love of fine books when he was already 54 years of age. He and his group were scorned as "amateurs who are going to teach us our trade" by professional printers, but as events proved he could teach them a valuable amount. Baskerville's words might have been written by this 19th century master: "Amongst the several mechanical Arts that have engaged my attention, there is no one which I have pursued with so much steadiness and pleasure as that of Letter Founding. Having been an early admirer of the beauty of Letters, I became insensibly desirous of contributing to the perfection of them". This is an artist with the credo of an artist; no "professional" printer of either Baskerville's or Morris's time would have been "insensibly desirous" of contributing to the perfection of printing.

The force that stirred Morris to action was Emery Walker's lecture given on November 15, 1888. Miss Morris, describing how his interest was awakened, says that: "Father was very much excited. The sight of the finely proportioned letters so enormously enlarged stirred him immensely, and he suggested to Walker on their way home, that they should make a new font of type together". Morris himself says: "I began printing books with the hope of producing some which would have a

ME list no more to speke of him, parde;
Thise false lovers, poison be hir bane!
But I wol turne again to Adriane
That is with sleepe for werinesse atake.
Ful sorwefully her herte may awake.
Allas! for thee my herte hath now pite!
Right in the dawening awaketh she,
And gropeth in the bedde, and fond right noght,
Allas! quod she, that ever I was wroght!
I am betrayed! and her heer torente,
And to the stronde barfot faste she wente,
And cryed: Theseus! myn herte swete!
Wher be ye, that I may nat with yow mete,
And mighte thus with beestes been yslain?
The holwe rokkes answerde her again;
No man she saw, and yit shyned the mone,
And hye upon a rokke she wente sone,
And saw his barge sailing in the see.
Cold wex her herte, and right thus seide she:
Meker than ye finde I the beestes wilde!
Hadde he nat sinne, that her thus begylde?
She cryed: O turne again, for routhe and sinne!
Thy barge hath nat al his meiny inne!
Her kerchef on a pole up stikked she,
Ascaunce that he sholde hit wel ysee,
And him remembre that she was behinde,
And turne again, and on the stronde her finde:
But al for noght; his wey he is ygoon.
And doun she fil aswown upon a stoon;
And up she riste, and kiste, in al her care,
The steppes of his feet, ther he hath fare,
And to her bedde right thus she speketh tho:
Thou bed, quod she, that hast receyved two,
Thou shalt answere of two, and nat of oon!
Wher is thy gretter part away ygoon?
Allas! wher shal I, wrecched wight, become!
For, thogh so be that ship or boot heer come,
Hoom to my contree dar I nat for drede;
I can myselven in this cas nat rede!
WHAT shal I telle more her compleining?
Hit is so long, hit were an hevy thing.
In her epistle Naso telleth al;
But shortly to the ende I telle shal.
The goddes have her holpen, for pitee;
And, in the signe of Taurus, men may see
The stones of her coroun shyne clere.
I WOL no more speke of this matere;
But thus this false lover can begyle
His trewe love. The devil quyte him his whyle!
Explicit Legenda Adriane de Athenes.

Ill. 66. A page from William Morris's "Chaucer", which came from the press 26th June 1896. Illustration designed by Sir Edward Burne Jones. Borders designed and engraved by William Morris.

definite claim to beauty." With his collaborators, Emery Walker, Edward Burne Jones, Walter Crane, Cobden Sanderson (the first and the last of these later were responsible for the Doves Press) Morris printed fifty-three books and sixteen leaflets, Christmas cards, etc. The total price of these when published was £ 144.4.6 for paper copies, and those printed on vellum were, of course, much higher in price: the famous "*Chaucer*", for example, was £ 20 on paper and 120 guineas on vellum. Not long ago a vellum "*Chaucer*" was sold in London for £ 4,000; a London firm has one on its catalogue at £ 5,000 and a New York bookseller quotes $ 35,000 as its price.

Thus paradoxically this high-minded man whose idea was to restore the nobility of handicrafts for those working in dull factories produced books in limited editions only and made them as expensive as books can possibly be. Even an ordinary "*Chaucer*" at £ 20 is hardly a book to be bought and read; it is a collector's *objet d'art*—far removed from Morris's socialist ideals. "To bring before the people's eyes the image of the thing my heart is filled with", he dreamed; but the ideal was one he did not, or could not put into practice although later presses have fulfilled it. If Morris brought beauty before the people's eyes he effectually kept it out of their hands. This is the most devastating criticism of his books, more than that archaism of style to which so much exception has been taken, or than the Victorian atmosphere of the books due mainly to the illustrations of Walter Crane and Burne-Jones.

Nevertheless, his books are extremely beautiful within their personal limitations and character. Speaking of his work in our time, we must always bear in mind that judgment of his work in 1890 by the standards of 1935 does not do him justice. The immense value of it can only be realized if we compare the style of printing in his own day with that which he did. Illustrations 17—20 represent what was then considered good taste, and if we turn to illustration 66 we see him in his true proportion to his contemporaries and realize something of his magnificent stature as an artist and his daring as an innovator. No other books express their contents in their appearance to the same extent. Where is a book so like a fairy-tale as "*The Glittering Plain*"? Where is one with the romantic glamour of the "*Chaucer*"? While his undecorated pages in the Golden Type, such as those of the "*Rape of Lucrece*" are full of a quiet, serene beauty.

Morris's pioneer work for good printing was in nothing more successful than in his search for root principles. His statement that "The unit of a book is not one page, but a pair of pages," became generally recognized as the only sensible starting point in book building, and still holds save in the rare cases where modern constructivist ideas have fought their way through the ranks of the mediævalists. But the most modern typographers admit that his writings gave them hints. Even if

they are flatly opposed to his style, if they depart from his sometimes naive opinions—naive, for instance, when he says that only such and such a margin is right because "this rule is never departed from in mediæval books"—they admit his influence. His avoidance of "the thickening and thinning of the line" in his Golden Type is still modern, as witness the "Beton" of the Bauer Typefoundry.

Morris's Kelmscott Press, though not the first "private press", for there were many in England in the seventeenth and eighteenth centuries, is certainly the most renowned in the world. A definition of the term "private press" is not easily given. If we realize that a certain amount of privacy is necessary this need not be carried so far that the books produced are not for sale. Sometimes they are not, but often they are open to purchase. The idea usually is that the printer is his own publisher, choosing the books he will produce and deciding upon format, type, illustration, paper and every detail according to his own personal private views, a high standard of work being presumed in the production. The press, therefore, is reserved for his own personal creations, and not for general use: is not so much a business proposition as an artistic enterprise, although this may happen to lead to financial success. Since owners of private presses send out prospectuses to people likely to be interested in their productions, Mr. Alfred W. Pollard's definition seems a little too severe when he says that "a double qualification seems necessary: the books must not be obtainable by any purchaser who offers a price for them, and the owner must print for his own pleasure and not work for hire or for other people". Even if a private press prints (as Morris did) for others, it is the owner's personal production, his particular bookmaking which those others desire. They have no part in the production of the printing, and their work is only accepted by the owner of the press because it coincides with his own standard of worth.

Various private presses, partly governed by similar, partly by other ideals than Morris's, sprang up. Mr. St. John Hornby's Ashendene Press, whose most famous production is Dante's *"Inferno"*, stands in the first rank. His "Subiaco" type was modelled on that of Sweinheim and Pannartz of 1465. A page of the Dante is reproduced among our plates in the appendix. Mr. Hornby declares that his press "came into being for the joy of turning out fine books and not for profit." The Ashendene ranks with the Kelmscott and Doves Press as the foundation stones of the revival of printing.

Emery Walker and Cobden Sanderson founded the Doves Press in 1900, the name being derived from the Doves Bindery which Cobden Sanderson had started in 1893. Te Doves Press Bible is the principal work produced by the collaboration of these two men. After the death of Sir Emery Walker the firm of Emery Walker Ltd. continued to produce fine reproductions of manuscripts, papyri, etc. In 1932 it produced "The

Odyssey", set in Bruce Rogers' "Centaur" type, and decorated with gold and black roundels: a very dignified book.

On Morris's death his plant (except the type and the blocks, which went to the British Museum) was purchased by Mr. Ashbee's Guild of Handicraft. In 1898 Mr. Ashbee founded the Essex House Press, which in 1907 came under the direction of Dr. Ananda K. Coomaraswamy. Mr. Charles Ricketts founded the Vale Press in 1896, and also started "The Dial" magazine. The books were actually printed by the Ballantyne Press but the production was entirely according to Mr. Ricketts' design. Among the followers of Morris, Lucien Pissarro with his Eragny Press occupies an outstanding position, being one of the few who used coloured woodcuts in his refined books.

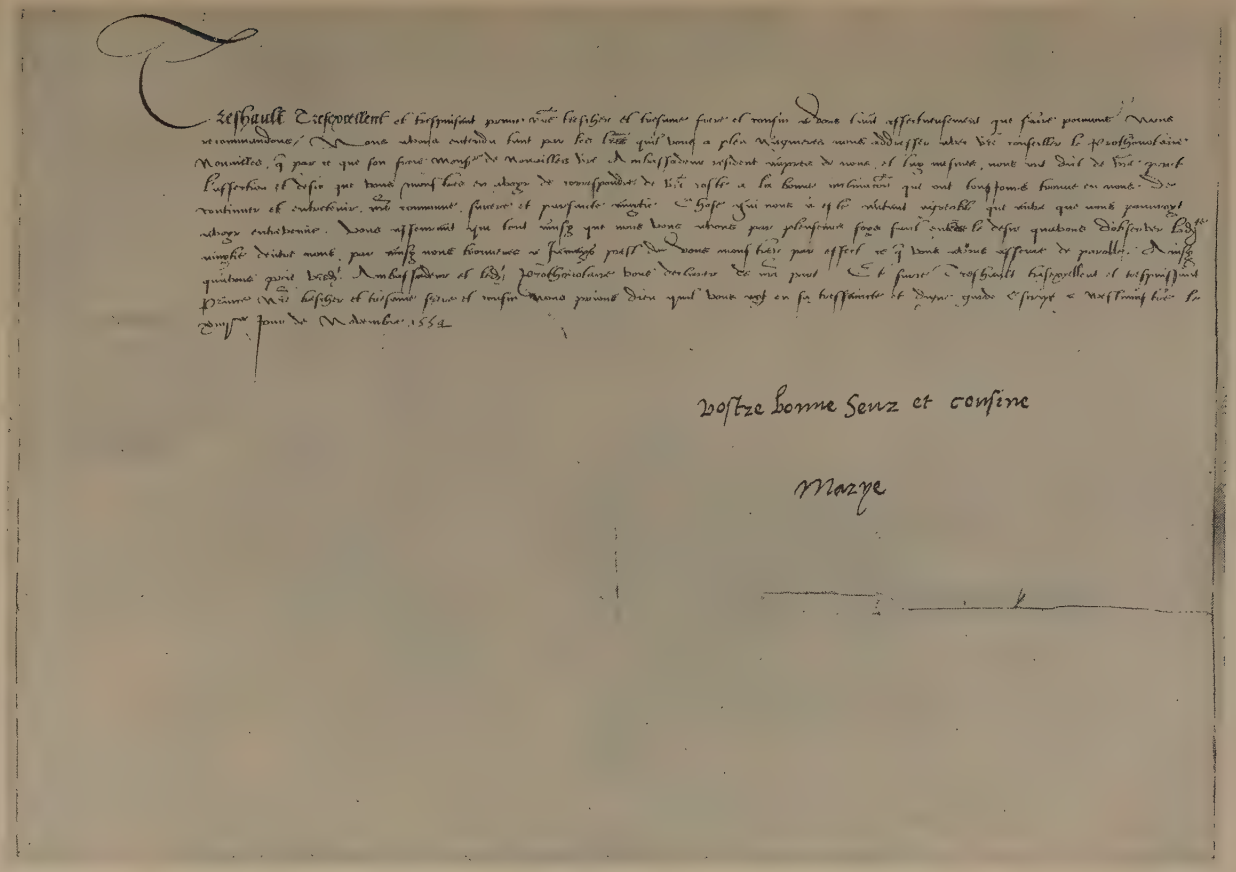
Referring to earlier times and to the 19th century presses, Mr. Newdigate says: "If in those days the private printers were followers of the fashion rather than the leaders, in our own day the rôles have been reversed". This very much applies to the Doves Press, of which the same expert points out how it aimed at solving the problems of typography, of "*typographie pure*" as the French say of the non-illustrated book. Thus the Doves Press became a beacon, strongly influencing German and other Continental printing. Cobden Sanderson's volume, "The Ideal Book", and the viewpoint expressed in it and embodied in his practical work with Emery Walker, as well as the writings of Walter Crane and Morris himself were put into practice abroad.

The revival of printing was foreshadowed as far back as 1789 when Charles Whittingham founded the Chiswick Press in London, which produced well-printed books for several publishers, using a revived Caslon letter. In 1883 the Arden Press was started. In 1890 Mr. Newdigate, and in 1903 Mr. Joseph Thorp, both enthusiastic book-lovers directed it. Later it came into the hands of the well-known firm of W. H. Smith and Sons. In course of time Mr. Thorp became a consultant of the Curwen Press, Mr. Newdigate having taken the directorship of the Shakespeare Head Press, founded in 1904, which produced among many fine works a beautiful "Chaucer" and an illustrated "Froissart".

Eric Gill, Robert Gibbings, Lettice Sandford, David Jones and other artists did interesting work for the Golden Cockerell Press, and we show our readers a fine design from the illustrations for "The Book of Jonah" by David Jones. For outstanding work the Gregynog Press should also be mentioned.

The Cuala Press is an Irish press closely connected with William Butler Yeats, whose poems and plays it printed in 4—500 copies; the works of Synge, Lord Dunsany and an "*Anthology of Modern Irish Verse*" being other important items.

In studying the variety of presses producing fine work one other type of establishment should be mentioned. This is the small group of which



Letter by Mary I (1516-1558), Queen of England, dated Westminster, 14th November, 1554, and addressed to the King of France. It is interesting to compare this writing to the "escriture à main"-type, shown in the Appendix. By courtesy of Messrs. Maggs Bros., London.

PUBLII VIRGILII

MARONIS

BUCOLICA,

GEORGICA,

ET

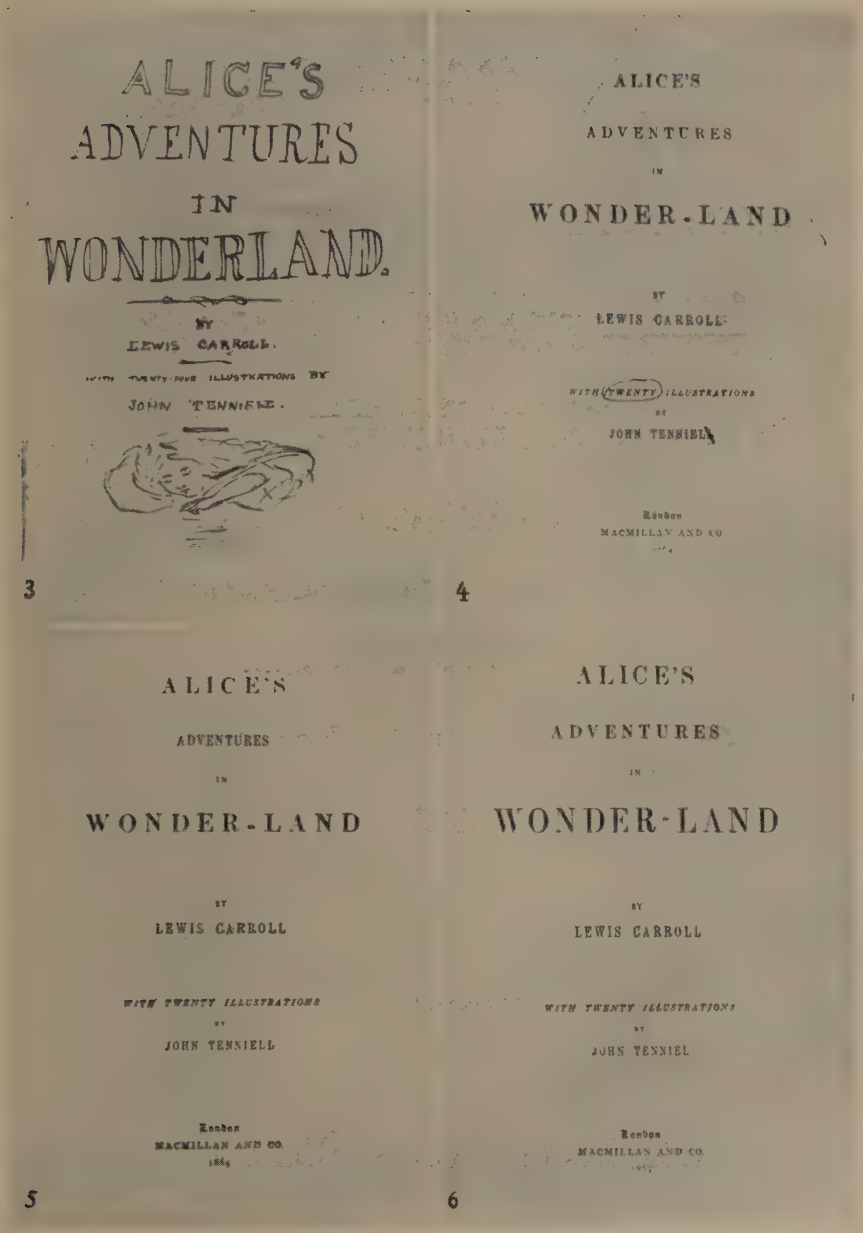
AENEIS.

BIRMINGHAMIAE:

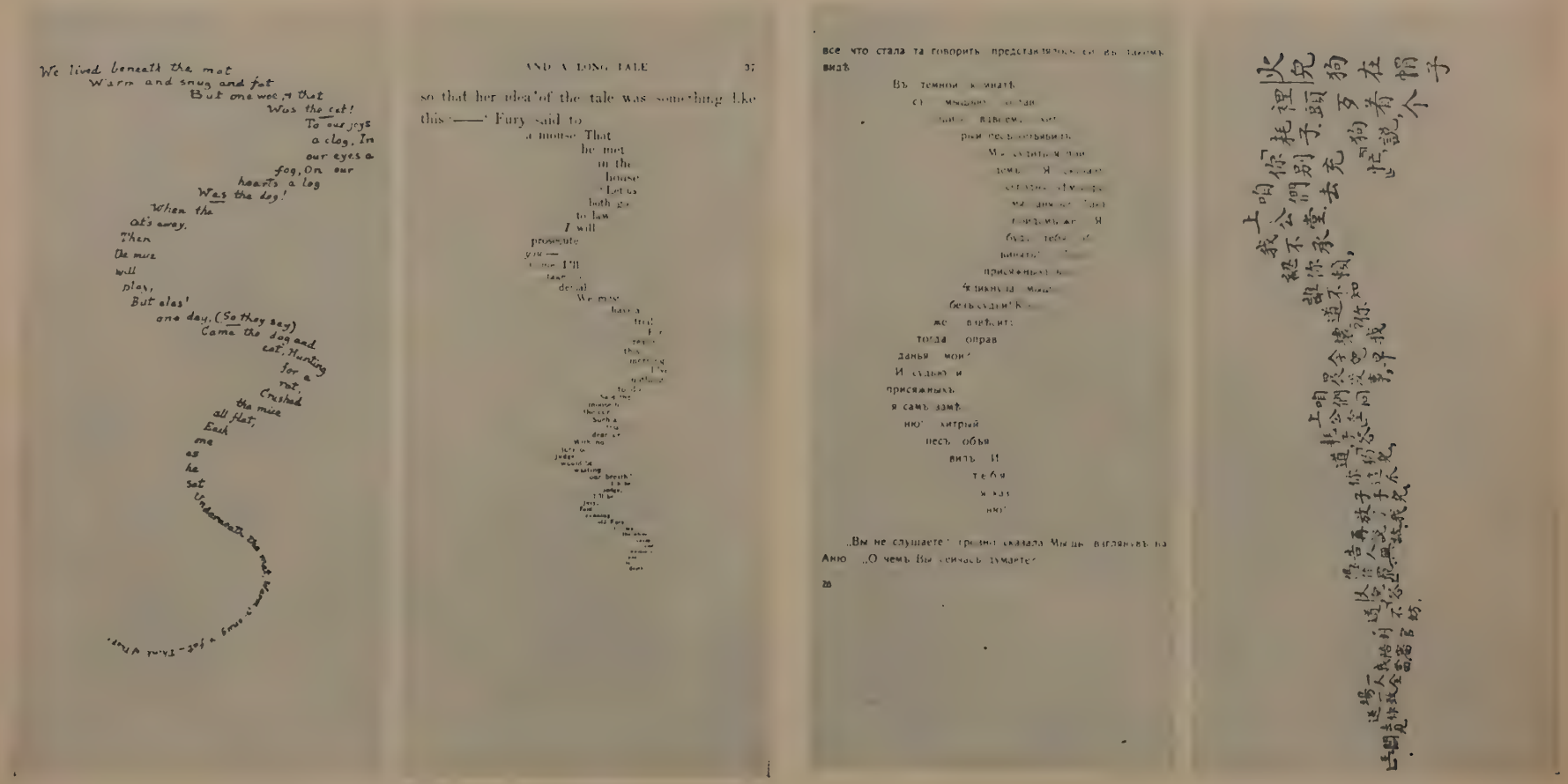
Typis JOHANNIS BASKERVILLE.

MDCCLVII.

Title page by Baskerville, 1757. By courtesy of Messrs. Benn, London.



Alice's Adventures in Wonderland, first edition. Lay-out, and proofs of title page, 1865. By courtesy of Messrs. Macmillan & Co., London. Blocks by G. Rebner & Co., Leipzic.



Illustrative type-setting. The mouse-tail in Carroll's "Alice in Wonderland" in the manuscript, in English type, in Russian and in Chinese.
By courtesy of Messrs. Macmillan & Co., London. Blocks by G. Rebner & Co., Leipzic.

The Nonesuch Press, founded in 1923, is the outstanding example. Named after the Nonesuch Palace of Tudor times, one of its devices is a composition by Stephen Gooden of that building and two figures from its still extant tapestries. "The Book Public may be divided into three parts", says the prospectus. "The libraries cater for the section of it which reads books without wishing to possess them. A number of 'toy' presses cater for collectors who do not read. The Nonesuch Press was founded in the interest of those among book collectors who also use books for reading."

The policy, therefore, is one of consciously artistic production at something near commercial book costs. The books do not, as Morris's do, scorn modern machinery; and it therefore became possible to produce a Bible which Mr. Morison calls "a miracle of cheapness", his reference being to price and not to quality. Francis Meynell, who governs the aesthetics of the Nonesuch, has the books printed at various presses according to his designs.

The standard of book production in England is sufficiently high to make mention of certain houses invidious. One or two of the publishers, such as Heinemann, have their own presses. One establishment which has turned out many fine books for several leading publishers is the Curwen Press which owes so much to Mr. Harold Curwen, who was joined in 1921 by Mr. Oliver Simon (the editor of "The Fleuron" in which office he was followed by Mr. Morison). Various interesting types, such as those of Rudolf Koch and Walbaum were introduced from Germany; and the stencil process was brought over to the British Isles from France where colour illustration is of much more importance than elsewhere. Lovat Fraser designed vignettes and cover papers for the press, and Albert Rutherston's work has been much used by them. Probably no press has done more to seek co-operation with the artist: Percy Smith, Paul Nash and others having been recruited when occasion offered.

Present-day commercial printing and illustration in England is stimulated a good deal by annuals. Penrose's, for which the Country Press is responsible, has given us during many years a review of the latest processes in well-chosen specimens and clearly written descriptive articles. A younger publication on similar lines is the two-years old "Print User's Year Book", wherein various type faces and their qualities, styles of illustration and the most suitable technique for these are ably explained and demonstrated, while valuable definitions of technical expressions complete the interesting text. The Book Collector's Quarterly is an important scientific magazine which deals with historical matters and contemporary fine book production alike.

The recent Exhibition of British Art in Industry at Burlington House whilst demonstrating the high standard of the art in England, confirmed

Ill. 67. Woodcut by Douglas Percy Bliss. From "The Devil in Scotland", 1934. By courtesy of Messrs. Alexander Maclehose & Co., London.

Ill. 68. Pen drawing by Arthur Rackham. From "Rip van Winkle". By courtesy of Messrs. William Heinemann, London.

a characteristic of British printing which was manifest in the 1925 Exhibition of Decorative Art in Paris: that it stood by the traditions rather than the experimental ultra-modern, but within those limits came to something near perfection. It was, perhaps, a pity that at this great Exhibition no examples of pure typography were shown, for it is in this

Ill. 69. Design for the jacket of "Sea Sequel to the Week-End Book" by C. Paines. By courtesy of the Nonesuch Press, London.

Ill. 70. Pen drawing by Rockwell Kent. From Chaucer's "Canterbury Tales". By courtesy of Messrs. Harrap, London.

department rather than in that of the illustrated book that English printing excels. Nevertheless the scores of fine books shown, produced in the majority of instances by printing houses laying no especial claim to anything more than commercial orders well executed, revealed how high was the English level of book production to-day.

CHAPTER V

PRINTING IN AMERICA FROM THE BEGINNING TO BRUCE ROGERS

"Each piece of printing has a still, small voice of its own, if we can but hear it", says that scholarly expert D. B. Updike, whose Merrymount Press has caused a revival in printing in the New World. Little wonder that busy America was slow to hear and understand this delicate music of the printed page. European printing emerged from the silence of the mediæval monastery's scriptorium, where the noble art of calligraphy was practised with endless patience, and thus Art preceded Printing. In America on the contrary the latter preceded Art. The trading settlers who fought Indians had other things to think of than the mediæval monk in his pious adoration. Thus calendars and bills of lading, weekly papers and ready-reckoners preceded the first printed book. But America could not have it said that it was behind in matters of religion, and so we find that the first printed book is "*The Whole Book of Psalmes, in Metre, faithfully translated for the use, edification and comfort of the Saints in publick and private, especially in New England*". It was produced by a locksmith, Stephen Daye, in 1640; so comparatively speaking the development of printing in America is a "short" story. The locksmith who unlocked the Psalms for the welfare of New England had been brought over by the Rev. J. Glover who when having raised a little money for the College at Cambridge, Mass. had a press set up in the house of the President of the College. In 1661 the Old, and in 1663 the New, Testaments followed, translated into the language of the Massachusetts Indians by John Eliot.

Neither in the 17th nor in the 18th century did American printing show many signs that the making of books was considered a matter of artistic endeavour. That it could be so was not yet shown in the printing of "*Typographia, an Ode on printing*", 1730. Only after Caslon revived the art of type-founding in England it became easier to import good type instead of second-hand material which had experienced too long and too busy life in an English printing-office; for type, like all good things, was procured from the settler's original homeland. It was 1775 before a newspaper "*The Pennsylvania Mercury*" appeared which had been printed from type made in America. In the same year the printers Storey & Humphries produced a book printed with "Types, Paper and Ink manufactured in this Province". It well may bear the name of "*The Impenetrable Secret*", for as it disappeared completely and no copy is known to exist, we must leave its secret unbroken, however un-American it may be to leave secrets unpenetrated. We only know that it was the first truly

TYPOGRAPHIA.

AN

O D E,

ON

PRINTING.

Inſcrib'd to the Honourable

WILLIAM GOOCH, *Eſq;*

His Majeſty's Lieutenant-Governor, and Commander in Chief of the Colony of *VIRGINIA.*

——— *Pleni ſunt omnes Libri, plenæ ſapientum voces, plena Exemplorum vetuſtas; quæ jacerent in Tenebris omnia, niſi Literarum Lumen accederet.*

Cic. Orat. pro Archia.

WILLIAMSBURG:

Printed by WILLIAM PARKS. M,DCC,XXX.

Ill. 71. Title page of the first book printed in Virginia, 1730. Only one copy of the original edition is known.

THE BLESSED DAMOZEL

THE BLESSED DAMOZEL leaned out
From the gold bar of Heaven
Her blue grave eyes were deeper much
Than a deep water, even.
She had three lilies in her hand,
And the stars in her hair were seven.

Ill. 72. Typography and decoration designed by Frederick W. Goudy. The village Press, 1903.
From Ransom, "Private Presses".

"American" book, and the history of American book-making may, therefore, be said to begin with this "Secret".

In 1795 Archibald Binny came to Philadelphia and in the course of time provided a hundred or more printers with type, so that gradually printing developed and spread over the New World.

An American of great merit and intelligence brought new European influences across. Benjamin Franklin when visiting Europe highly praised the achievements of Didot in Paris, and sent his grandson there as an apprentice of the French printer. He corresponded with Bodoni, and was an admirer of Baskerville. Mr. W. D. Orcutt gives the full text of an amusing letter written to the Birmingham typefounder by Franklin from London in 1760, in which he described how a critic opposed to the Baskerville letter proved unable to distinguish it from Caslon's which he praised. Franklin gave him a page from Caslon's Specimen Book, saying he brought these Baskerville-letters with him straight from Birmingham, on which the critic at once showed (imaginary) disproportions therein .... greatly to Franklin's amusement, who forthwith wrote to Baskerville how well his joke succeeded. Each piece of printing has indeed a voice of its own, *if we can but hear it!*

Franklin's *"Cato Major"* of 1744 is one of the important works of American typography of the period. Slowly the art spread, but not much more slowly than in England, for Cambridge, Boston, Philadelphia and New York had printing presses in operation before Birmingham, Leeds, or Liverpool could boast them.

In even earlier times other regions in America were ahead of what we call now the United States. "The Presses of the English colonists in North America were almost exactly a century behind those of the Spanish in Mexico, who got out complete books at least as early as 1540", writes Mr. R. L. Duffus, an expert on the historic development of the book in America.

But the U.S. made up for this! In 1740 Boston possessed five printing-offices. In 1775 the truly "American" book was born. Less than a century later, in 1860, book production had risen to astronomical dimensions; of Webster's Spelling Book 30,000,000 copies must have been printed, and McGuffey's school-readers, started in 1836, reached over 80,000,000 before 1860 came to an end. Since then America has been producing books in numbers which truly may be called "American" for they total one or two hundred millions per year.

Has it been reading to the same extent? Since 1930 some 10,000 new books are presented to the public to choose from every year, a total output of about 200,000,000 every 12 months, to quote Mr. Duffus again, "But the figures dwindle when they are applied to population. They indicate that the American public buys approximately .... two books per capita each year, and that it pays for books certainly not more than

GOUDY

The following are the members of the Goudy Family which are all obtainable from our London stock.

Goudy Oldstyle
Goudy Italic
A.T.F. Goudy Cursive
GOUDY TITLE
Goudy Catalogue
Goudy Catalogue Italic
Goudy Bold
Goudy Bold Italic
Goudy Extrabold
Goudy Extrabold Italic
Goudy Handtooled
Goudy Handtooled Italic

Sole agents for the American Type Founders Co.

C.W. SHORTT & Co LIMITED

8 FULWOOD PLACE, HIGH HOLBORN, LONDON, W.C.1.

CLOISTER

The following are the members of the Cloister Family which are obtainable from our London stock.

Cloister Oldstyle
Cloister Italic
Cloister Lightface
Cloister Lightface Italic
A.T.F. Cloister Cursive
Cursive Handtooled
CLOISTER TITLE
Cloister Bold
Cloister Bold Italic
BOLD TITLE
Cloister Bold Condensed

Sole Agents for the American Type Founders Co.

C.W. SHORTT & Co LIMITED

8 FULWOOD PLACE, HIGH HOLBORN, LONDON, W.C.1.

Ill. 73. Types cast by American Type Founders Sales Corporation 300, Communipaw Avenue, Jersey City, New Jersey.

one half of one per cent. of its annual income"! Certainly not too much.

In addition to this there are, of course, the books read from the public libraries, estimated at two books per year, and "two books rented from rental libraries, one book a year borrowed from a friend — or a possible total of seven books a year read by the average American".

An enormous influence upon reading was the rapid growth of the public libraries. Carnegie's name is known all over the world for his interest in books. The city libraries grew similarly and astonishingly, and yet "there can be no doubt that on the average Americans at present read too few books. That is, they would be leading a richer and more enjoyable life if they read more". This, however, depends on the books, one would think. But at least *good* books are available, The Library of Congress at Washington contains about 4,000,000 books; the Public Library, New York possesses about the same number. The Harvard and Yale University Libraries can boast about three and two millions respectively, while institutions with something like a million books each are quite numerous: the Columbia and Chicago Universities, the Public Libraries of Chicago, Cleveland, Boston, Los Angeles, Brooklyn, and Cincinnati. Yet 83 per cent. of the rural population had no public-library service in 1929.

The standard of printing, not very high when the "Ode" on the art was published (1730), did not improve much until the days of Morris, for during the 19th century the artistic level all over the world was the same. Theodore Low de Vinne and John Wilson of the Cambridge University Press might be compared to the Chiswick Press in London for careful and tasteful typography amid an ocean of uninteresting printing. De Vinne was an author of great merit in the realm of the book as well. He was "an enthusiastic lover of his craft and a painstaking historian to whose work the present writer, for one, is deeply indebited", says Stanley Morison, adding: "Of recent years, perhaps, attention has focussed itself a little too narrowly upon the private presses. Mr. Robert Steele's "*Revival of Printing*" (1902), for instance, is almost entirely devoted to them, but it may be forgiven him since it is the habit of the private-press gang to take themselves a little seriously."

The private-press people may be of a different opinion or state that everybody takes himself a little seriously. Anyway, I hope they think that this remark may be forgiven Mr. Stanley Morison, whose influence has contributed so much to the general rise in the standard of printing on both sides of the Atlantic. Certainly also the Monotype, the Linotype, the American Type Founders, and similar establishments have done much in this direction as well. Will Ransom, once an enthusiastic helper of Mr. Goudy at the Village Press, is another author who wrote a bright, lively, and learned book on "Private Presses", both English and American.

PRIMITIVE
PAPERMAKING

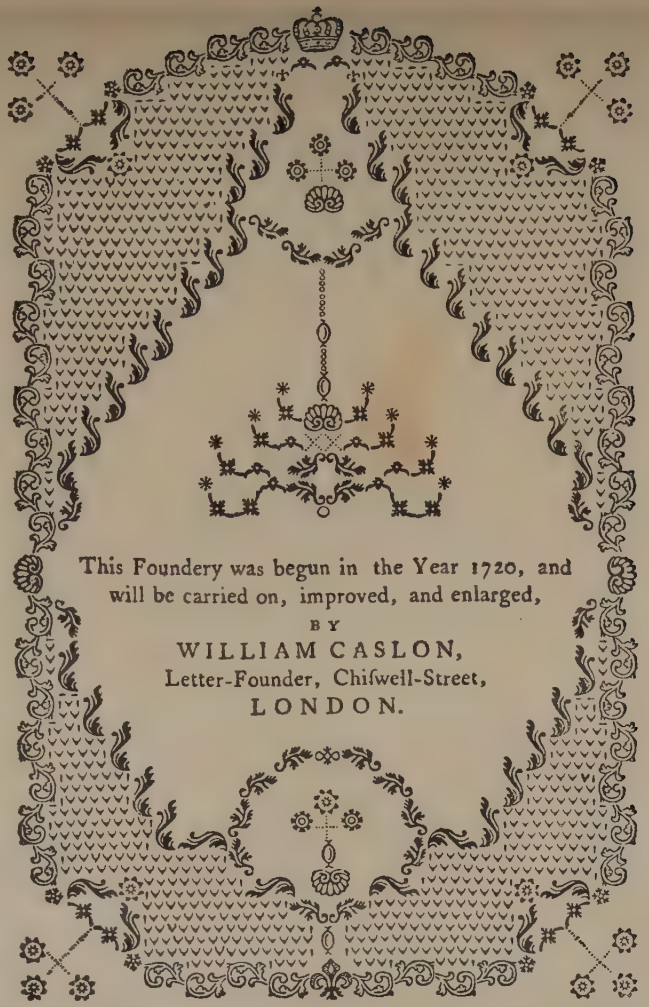
AN ACCOUNT OF A MEXICAN SOJOURN AND OF A VOYAGE TO THE PACIFIC ISLANDS IN SEARCH OF INFORMATION, TOOLS, AND SPECIMENS RELATING TO THE FABRICATION AND DECORATION OF BARK-PAPER · · ·

In the second half of the 19th century there is the Fair Hill Press; and since 1900 the Elston Press has produced fine books in which William Morris's influence, of course, may be traced. Ralph Fletcher Seymour designed a special letter for the Alderbrink Press after having printed books which were hand-lettered, zinco's having been made to print from. Among his beautiful productions may be mentioned "*The Love Letters of Abelard and Heloise*", echoing the Morris-style. A type-design called after the English master was a production of the Kirgate Press, which was in operation between 1901 and 1905. But Frederick W. Goudy is the American type-designer *par excellence*. His work also bears traces of Morris's influence, especially in the early books which came from his Village Press. Several of his alphabets—he made over fifty—have been cast by the American Type Founders. The press was put up in a suburb of Chicago and the first book was Morris's "*Essay on Printing*". A fire hampered the activities between 1908 and 1911, and of late years designing has been Mr. Goudy's principal work. One of the Albion Presses owned by Morris came into his possession, and was used at the Village Press. How much Goudy owed to Morris and admired him, may best be quoted in his own words. When on holiday in London, he had asked Mr. Alfred Pollard of the British Museum whether he could "see and handle" one of the Kelmscott Press woodblocks, and "a cart was wheeled up, piled high with engraved blocks. At the sight of so much richness, words failed me, but I know that at that moment, as I touched them lovingly, virtue went out from me. The thrill of that event, only to be experienced again some years later when the Village Press became the proud owner and user of the press itself whereon Morris printed the great "Chaucer". Even now, when I visit my friend, Melbert B. Cary Jr., at the press of the Woolly Whale (ye gods! what a title) who is the present owner of the press, I like to lean against it and silently commune with the 'still-beating hart of the noble dead'."

This peculiar Whale has produced some fine books and taken the liberty to employ such fine, and—so far as the Anglo-Saxon world is concerned—unheard-of types as Prof. Rudolf Koch's "Neuland", a refreshing experiment among the endless repetitions of hereditary forms of letters in Anglo-Saxon countries. The press also did a set of playing cards, and on the centenary of Morris's birth printed a hitherto unpublished essay by him on the ornamented manuscripts of the Middle Ages.

But others also leave the beaten track. In Douglas McMurtrie we have another and fervent pioneer, a gifted man who has an open eye for new possibilities, an original designer of books and periodicals, and an intelligent author.

D. B. Updike's Merrymount Press, founded in Boston in 1893 is in the hands of a man who both as a scholar and a practical printer has



Ill. 75. Printer's ornaments in Caslon's Specimen Book, 1785. By courtesy of Messrs. H. W. Caslon & Co., Typefounders, London.

Ill. 76. Bruce Rogers' use of ornaments. From "Ancient Books and Modern Discoveries" by Sir Frederick Kenyon, The Caxton Club, Chicago, 1927.

had great influence to the good. His monumental work on *"Printing Types"* we have already referred to. His "Montallegro" type was designed by H. P. Horne, and Mr. Goodhue was equally happy in his "Merrymount" letter for Updike's press. In 1928 Updike produced a fine Standard Edition of *"The Book of Common Prayer"*.

Dard Hunter also is the owner of a private press where things are taken seriously. He will design his own type, make his own inks, and do the printing himself. Ye olde home-made book! Mr. Hunter is particularly interested in paper-making, on which subject he has written more than a dozen books and articles. Alas, the right remark has been made that "It is to be regretted that his books are issued in such small editions", and at such high prices.

In Pittsburgh the Laboratory Press of the Carnegie Institute of Technology is led by Porter Garnett, and similarly excellent work is being done by Elmer Adler as head of the Pynson Printers, and as one of the founders of Random House. The Lakeside Press (Donnelly & Co.), Chicago, have also a number of fine works to their credit. In this firm Mr. William A. Kittredge directs what Bruce Rogers (in a private letter to the author of this book) described as "a department that habitually produces only the finest work in either books or commercial printing".

At the Universities Bruce Rogers (Harvard) and Carl Purington Rollins (Yale) contribute their share to the high level of present-day printing. Mr. Frederic Warde was sometime director of typography at the Princeton University Press. Publishers like Crosby Gaige, and Rimington & Hooper, and Alfred A. Knopf publish works in either small or large editions which compare well with the very best books produced anywhere.

Bruce Rogers, whom we have already mentioned, came into the field almost simultaneously with Updike. He is to be considered as a designer of books rather than as a printer. "Perhaps his greatest service to modern books was to introduce, or emphasize, freedom of individual expression within the strictly defined limits or derivative, even imitative typography. In doing that he created, or at least greatly developed, allusive typography", says Will Ransom, and one could not put it better. Private presses, by using only one or two faces of type and a repeated style of decoration, had presumed to interpret widely-differing thoughts in one immutable pattern .... Rogers always used the appropriate instrument. "For the symphonic structure of Montaigne's *Essays* there was the full scoring of specially designed type in noble folios, while Ronsard's lyric verse sang gracefully from the viole d'amour of Caslon Italic", says his admirer poetically. In 1896, co-operating with George H. Mifflin, he began the Riverside Press Limited Editions; in 1912 he left the press. Later, he became the adviser of the Cambridge and Harvard University Presses, and

co-operated in the plant of William Edwin Rudge at Mt. Vernon, New York. Recently he designed the Folio Bible for the Oxford University Press, set in a special face of the Centaur-type produced by the Monotype, a 22-point face, somewhat less round than the standard Centaur permitting a double-column page of large-faced type which is extremely legible. In the Shaw Translation of the Odyssey, published by Emery Walker, Ltd., the Centaur is also shown to advantage. Bruce Rogers is especially fond of ornaments, themselves mostly copies of books about 1500 or 1600, which he applies and combines with great skill (illus. 76).

Of the many interesting presses in present-day America we can name one or two more only, or this chapter would grow into a catologue or a book. The Clerk's Press and the Press of the Metropolitan Museum, New York must be mentioned, and also "The Sign of the George", established by George Parker Winship—a press where the printing of books is put into practice by an author who has devoted much study to the history of the craft.

In concluding the survey contained in this and in the previous chapter we must express our thanks to Messrs. Bumpus, Messrs. Maggs, and Messrs. Quaritch of London, by whose helpfulness the author profited, in that he was able to examine and to reproduce a great variety of works which otherwise would have not been so easily accessible to him.

CHAPTER VI

TYPE AND TYPE-SETTING

It goes without saying that anybody who possesses a text which he considers worth printing at all will have it printed as well as possible: i.e., in a suitably fine type, on good, lasting paper, well-bound, and, perhaps, profusely illustrated. It goes without saying, but—as with many things reasonable enough in the abstract—it seldom happens. Too few readers, alas, take an interest in the *making* of a book; if they did they would enjoy it more. To many the work is printed, and that is all they know. How the publisher's task differs from the printer's—how they are sometimes one person or firm and sometimes not—why an author does not plan his own book—why a designer should decide upon format, type, paper, etc.—all this is Greek to the average reader. Nor does he know that one cannot have too coarse a paper if a thin-serif letter is desired; or that the choice of illustrations is governed by the kind of paper that is to be used.

Let us first take a glance at the publisher's part in this production. He is the man who thinks he can decide whether a manuscript is potentially profitable as a publication. He often finds afterwards that his judgment was at fault, but the layman must not assume that he is not fit for his task because of that. Several London publishers declare that they publish an average of one out of thirty MSS. submitted to them—a figure that indicates how difficult the choice must be. It has to be remembered, too, that the public will buy to-day something quite different from that which it will choose to-morrow, and on this shifting factor of popular taste depends the commercial success of a book. One instance will make this clear. Several years after the World War everybody was weary of reading about the subject. Many publishers, therefore, turned down Erich Maria Remarque's "All Quiet on the Western Front". At last one risked it. The book was such an immense success that the presses could not keep pace with the demand. (Eventually it was banned in Germany by the present *régime* and burned in public bonfires; but like many burned books and burned persons it may live for centuries yet.)

The publisher may pay the author a royalty on each copy sold; or he may publish at the author's risk (i.e., the author will pay expenses and receive the proceeds from sales) or he may pay a fixed sum for the publishing rights. Since no small proportion of the costs of production is on account of the type-setting one need hardly indicate the feelings of publisher and printer when the author decides to vary his text in the proofs. Hastily-written additions are equally welcomed by the compositor,

who counts the letters he has to set with uncanny accuracy and adds them up in a handsome bill for "Author's Corrections".

The modest author may regard his corrections as no more than "just a word here and there". Unfortunately, for him or his publisher, even one word added in the printer's proof may mean that a number of lines must be reset; and even the addition of a comma in these days of mechanical composition probably means that the whole line must be reset, since lines are often cast in "slugs"—that is to say, the whole line is one solid piece of metal. This was not so in the old days when each letter was cast in metal individually and added to others by hand in the composing-stick, as shown on the inset plate.

Before this could be done the letters were cast in a matrix, a "negative" mould. We have already seen that the clay matrix was followed by lead and copper, which allow a greater number of letters to be cast and make very small lettering possible. Printer's type has the letter in relief as a typewriter has it. To cast it thus a mould is made by punching, the shape of the letter being engraved in relief on the hard punch. This explains why the old printers, who were their own type-founders, always were closely connected with engravers, for these were their punch-cutters. Manutius in Venice was happy in having such able engravers as Campagnola, Raibolini, and others near at hand, for the greatest accuracy is necessary for this work. Gutenberg is also seen in company with Hans Dünne, a goldsmith, who no doubt made punches to Gutenberg's designs. The punches are hardened by being heated and then plunged into cold water.

The next step is for the matrix to be "justified". For the depth of each part of each groove must be minutely equalized, so that every part of the letter has precisely the same height when the type is put on the bed of the press. Were this not done the various parts of the printing surface or "face" of one letter would print unevenly black on the paper. The almost incredible accuracy of the five-thousandth part of an inch is necessary, and is obtained to-day by gauges registering such infinitesimal differences, which are adjusted by a filing of the surface. One can imagine the care which must have been bestowed by old printers in days when everything was done by hand, without any aid from such ingenious mechanical appliances.

Nowadays matrices are also made by electrotyping. The type-metal is an alloy of lead, tin, and antimony; a letter as the compositor will handle it is a tiny thin strip of metal with the letter standing in reverse on its end. A match standing on its end, would represent the fundamental shape, but with small type no less than 416 letters will go into one square inch. The length—"type high", as it is spoken of to indicate the height from the bed of the press to the surface of the letter—is much less than that of the match, and varies in different countries. In England

it is 23.32 millimetres or .917 of an inch; in Holland, 24.85 mm.; in France and Germany, 23,56 mm. Obviously, the type height of the letters for any one piece of printing must be standardized, since they are to be printed on one press.

Outside this rigid measurement of the height, the compositor can vary the sizes of the letters at will, according to the need for visibility or emphasis. Often he is guided by a pencil sketch or "lay-out"; especially when he is setting a title page or publicity matter. But a great variety of sizes and types looks bad, and restraint in this respect cannot be sufficiently recommended. Also a book-face should be quiet in character, whereas commercial printing, jobbing, and advertising will stand a more lively and daring face. Their letters may, as it were, raise their voices at need.

The compositor used to have names not only for the different characters, but also for the various sizes of type. Until the end of the 19th century each typefounder had his own sizes and gave them the names he chose, printing and founding being personal individual work. Present-day founding is based upon the point system. The old unit of measurement was usually the pica, and this still survives, being synonymous with 12-point in English and American type. But instead of the other vague names—nonpareil, pearl, ruby, brevier, bourgeois, etc.—the French printer, Didot, invented the idea of having as a unit of measurement the point, which is four-tenths of a millimetre. Didot died in 1804, but it was 1883 before the point system was introduced in America. The English measurement is based on a point of $^{1}/_{72}$nd of an inch.

Points refer to the depth of the type-face. The width is measured in units called "ems", a name which derives from the letter M and indicates a quadrat or ,,quad", because an m is approximately a square type. Thus "ems" are accepted as the unit of typographical measurement in the width of the line of type, and "ens" as representing the average actual letters, since the n is narrower. Six letters would be represented by 6 ens or 3 ems. Ems can be large or small, of course, as the type size itself varies; but, unless otherwise stated, the pica em is generally meant. A 12-point letter is quite a readable book-face, as the present text may demonstrate.

Apart from his actual letters the compositor uses spaces at the ends of words, of sentences, and of paragraphs. These are strips of metal less high than the letters themselves, so that their surfaces shall not be brought into contact with the inking roller on the press. They vary in width, from the very thinnest, the "hair-space", through the thin-space (5 to the em), middle-space (4 to the em), and thick-space (3 to the em), to the en-quad, thence to em-quad, 2-em and 3-em quads.

The hand-compositor stores his type and spaces in a "case", which

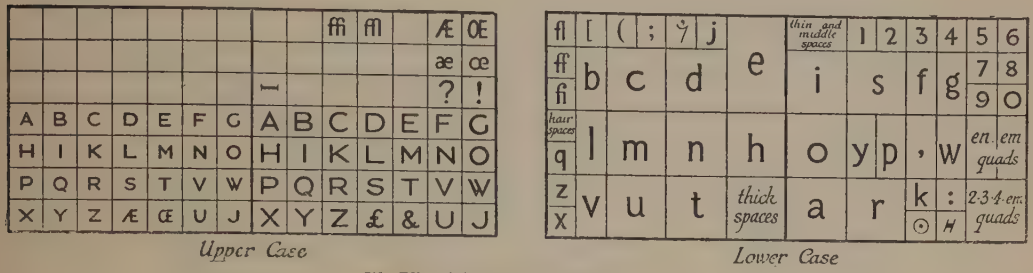
A COMPOSITOR AT WORK

With his right hand the compositor is placing type into the stick. The galley is lying in front of him.

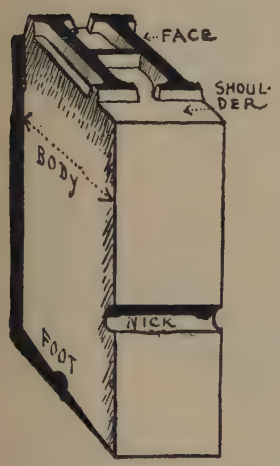
LOCKING UP THE FORME

Half-tone block, deeply etched for printing on uncoated paper by **L. Th. Boelaars and Sons, The Hague,** and printed by **C. Chevalier, Rotterdam.**

in reality is a tray partitioned off into little compartments. The "upper-case" holds the capitals and the figures; the "lower-case" the small or "lower-case" letters. They are arranged as follows, the apparently erratic placing being dictated by the convenience of having the most-used letters, such as the vowels, near at hand.

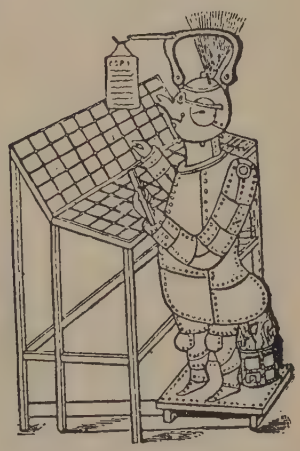


Ill. 77. The compositor's case.



Ill. 78. A type letter. The "nick" denotes the right way up of the letter in the setting stick.

Ill. 79. The compositor at his "frame", on which are placed the cases from which he takes the types.



Ill. 80. A caricature on the first composing machines, representing a mechanical man.

Letter by letter the compositor com-poses each word, each line of type in his "setting stick", which is a shallow metal tray, about two inches wide and eight long, its upper side missing and the left-hand side supplied by an adjustable slide which screws on the front edge and so determines the width or "measure" of the lines of type he is setting.

Not only between words may the compositor need to place "whites"; he may also desire extra white space between the lines, and this is achieved by "leading" or "spacing". In this case he will put a strip of lead of a certain thickness between the lines of the type. Standard thicknesses are 1, 1½, 2, and 3 point. The lead chosen depends very much on the

character of the type he is setting, and the width of the lines. A book-page set in type with long ascenders will usually improve by leading.

The margins also have to be filled in, and in this instance the large pieces of wood or metal employed are called "furniture". But before he surrounds his page with these marginal spaces the compositor has other things to attend to. Let us follow the stages of his handiwork.

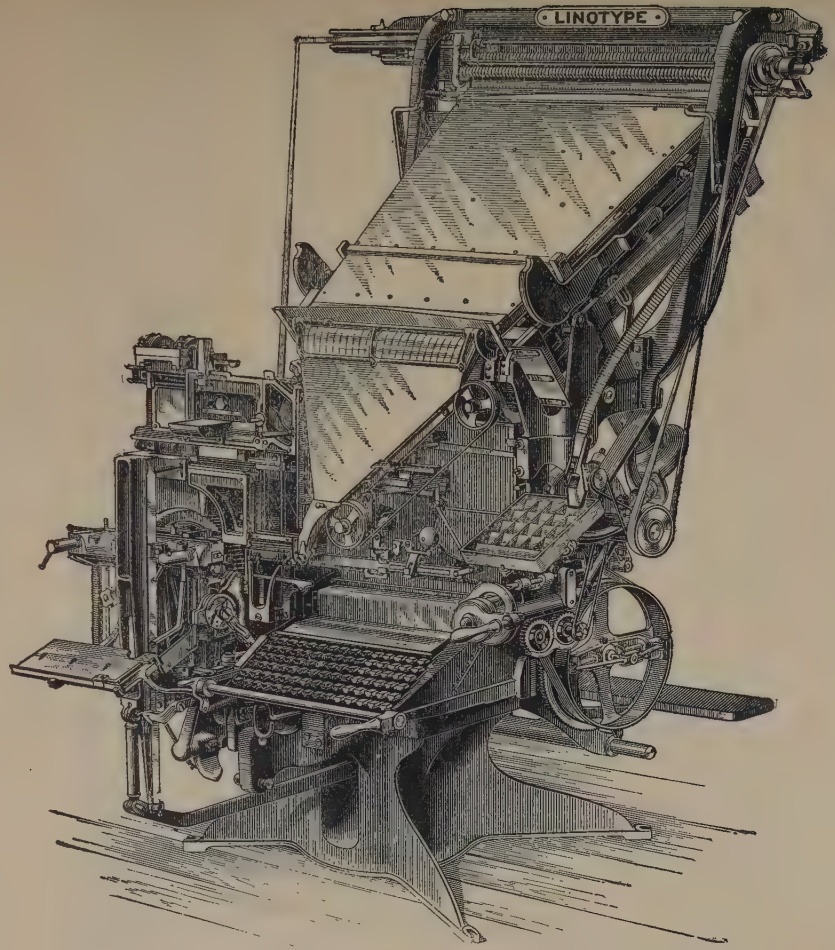
As some 10 or 12 lines will fill his stick, he empties it every now and again. This is by no means so easy an operation as it looks, for the lines are composed of a large number of separate letters. They are apt to slip and fall into that chaotic heap which in the printing-office is designated "pie"—a phenomenon as unwelcome there as the namesake is welcome at home.

The next operation is "tying up". Gradually the emptying of the stick on to the "galley" (which may be described as a metal tray) causes a page of type to be formed. A "reglet", a thin strip of wood, is placed at top and bottom and a string is wound round this compact mass of thousands of letters, which, since knots are impracticable, is secured by a loop at the loose end. The pages as they are thus formed are placed in their correct position inside an iron frame—the "chase"; the exact margins are built in with furniture; and the remaining space inside the outer edges of the chase also is closed up with furniture. In former centuries this was done on a stone surface, and the metal-topped table which has now taken its place is still "the stone" in printing-offices. The manipulation itself is called "imposing". In order to fix everything in the chase "quoins" are used. Once these were mere wedges of wood hammered tight with mallet and driver, but now a mechanical metal device is used. This widens when screwed and so presses type and furniture firmly together holding it by collateral pressure against the chase.

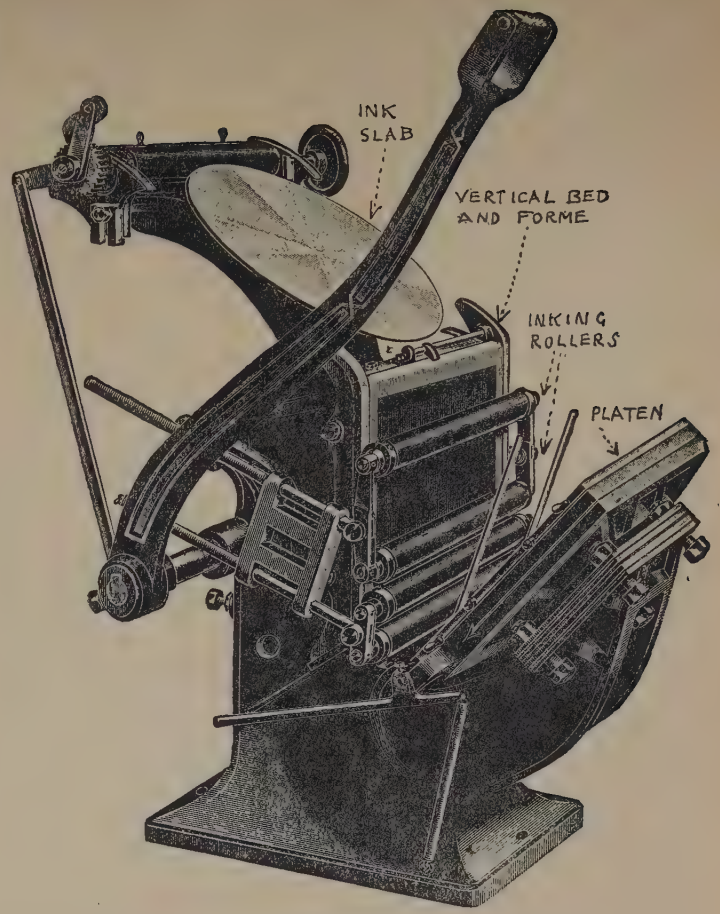
Now the "forme", as the whole is termed, is transferred from the stone to the bed of the press, and in order that the thousands upon thousands of letters should be perfectly equal in height they are "planed" by having a piece of wood placed on them and hammered gently, the quoins having been temporarily unscrewed.

By unscrewing also corrections can be made while the forme is already on the press, but it is advisable to finish these before the work has progressed so far.

This description applies to hand-setting, a process as old as Gutenberg, but one that, to a certain extent, is still used in every printing-office. Several mechanical methods have been devised to accelerate the process, and also to avoid the loss of time in "distribution" of the type after printing. Letter by letter this must be put back into the correct partitions of the case, and if one bears in mind that such approximately similar shapes as p's and q's, n's and u's must be so treated, and that all the letters are



Ill. 81. The Linotype composing machine.



Ill. 82. Light jobbing platen press. Output 900 per hour (see also Plate XXXII).

being seen in reverse during the process, it will be realized that some errors cannot very well be avoided.

It will be readily appreciated that any mechanical method of composition which speeded up the actual type-setting and made this wasteful and risky process of type-distribution superfluous is of great importance.

A great many such methods have been invented. In most cases a keyboard like that of a typewriter is used, and the letters are rattled off like machine-gun fire. Carl Herrmann has written a book about mechanical type-setting in which the history of no less than 63 systems is recorded. Already in 1822 William Church, of Birmingham, took out a patent on an invention which soon was shipwrecked. Later a man named Kastenbein of Hanover produced a machine which was introduced into the printing-offices of "*The Times*". Mergenthaler, a German who went to America to try his fortune, achieved a type-setting machine in 1884, after years of experiment and the expenditure of enormous sums of money. He is recorded as having spent over a million dollars. Another million was raised in the next year, and in 1887 he had produced only a dozen machines. Gutenberg himself had no greater difficulties than this pioneer. He retired from the company in 1888, and a new one was formed in 1891 which actually succeeded in paying a dividend in 1894. This, in the brevity of a code, is the history of the beginnings of the now perfect and universally employed Linotype. The machine is shown in ill. 81, and four pages of the Appendix show a selection from the great many fine alphabets the Linotype places at our disposal.

Especially in the case of newspaper-printing, bookwork with regular "body matter" and full-text pages, these slug-casting machines are invaluable. Others are the Intertype, the Typograph, and the Ludlow. The last differs from the others in that no keyboard is used, but matrices themselves are set together. The advantage of this over type-setting is that the matrices show the letters as they are and not reversed. Every line is cast in a few seconds as soon as it is set, so a very limited number of matrices is necessary, whereas in ordinary type-setting enormous quantities of each letter are indispensable. The Ludlow is devised especially for the quick production of "display" work.

The slugs of all these machines are melted down after use, so that distribution is done away with. There is also the advantage that spaces between words, being of a piece with the words they separate, cannot "rise" (i.e. work up to the inking surface, and so print as ugly defects marring the text).

A Linotype machine will have an output which equals the work of five or six compositors. It has no less than 1,400 matrices which move into place automatically at the touch of the keyboard; the lines are brought to "measure" (width) automatically; and the matrices are distributed automatically after the line has been cast from them. Enormous works

such as the "*Encyclopædia Britannica*" and the "*Dictionnaire Larousse*" are set on the Linotype. As every line is cast afresh, the type is never old or worn, for it is used once only and melted again afterwards.

The Monotype differs from the slug-casting machines in that it casts individual letters. It comprises two entirely independant machines: one being the keyboard which perforates a paper roll with combinations of tiny holes, different for each letter; the other being a caster worked by this paper ribbon on the principle of a pianola. Each letter or sign is translated into a particular combination of holes. This may seem cumbrous, but it has advantages. The paper ribbon may be kept and stored and recast if the book has to be reprinted. Corrections are simple, because each letter remains a single letter, and its fate does not entail the scrapping of a whole line. The width of the letters used on a line is recorded automatically, and before the line is full a bell gives a signal. Whereupon, by pressing two special stops the operator gives the line its full width, spaces being thus placed between the words, otherwise the line would end irregularly like typescript. About 150 letters per minute are cast. The Monotype is particularly serviceable for scientific works with many formulæ, etc., which add difficulty in slug-casting. Slugs are generally employed for novels, schoolbooks, or newspapers, the text of these being composed of "solid" pages. The Monotype has also done much to raise the level of printing by putting many fine type-faces at the printers' disposal.

Something should be added here on stereotyping and electrotyping. Both are means devised to preserve the setting while freeing the actual type for distribution. Another use is for the duplication of pages of set type so that more than one is available for printing at one time where enormous quantities are needed quickly.

A "stereo" is cast from type in a papier-maché mould, made by pressing the type—letters, pages, or whole books if need be—into specially prepared paper or "flong". From this, as from a typefounder's matrix, as many copies may be cast as necessary. For reprinting books which do not require alterations in the text this is invaluable, because these flongs take up much less storage space than type, and they release for other use the original type which would otherwise be tied up.

Frequently type is multiplied by casting such duplicates. This is the invariable practice in newspaper-printing, enabling enormous editions to be produced in a few hours. In this case the stereos are cast in a round form to enable them to be fixed on the cylinders of the machines, which are rotary in motion so that there shall be no waste of time or energy. The loss of time in the to and fro movement of the flat-bed press, of little account in small editions, becomes considerable if multiplied by hundreds of thousands, and is eliminated when the type is cast in the form of cylinders which move round constantly, printing all the time.

For newspaper printing the bending of the type forms means a slight distortion of the face, but this is so slight that for this highly utilitarian purpose it is not considered to matter. Rubber stereos are also much used in contemporary printing.

Electrotyping is making duplicates with the aid of electricity. The combined chemical action of a bath and an electric current dissolves a metal plate, and deposits a very thin layer of it (copper, nickel, etc.) upon objects placed in the bath. From type, blocks, or woodcuts a wax mould is made, and in the manner described one or more duplicates are produced. Such electros are made of copper in thin layers, lead being cast to make the back of this relief a flat surface serviceable for the printing press. In order to make them type high both electros and stereos are mounted on wood or metal in the same way as photo-mechanical blocks.

For making bookbindings nickel electros are often employed if the original is a woodblock, since this could not be pressed into the cloth binding very well. Stereos made by a German, Müller, and a Dutchman, Van der Mey, were in existence by the beginning of the 18th century. In 1727 Messrs. Enschedé of Haarlem printed a Bible from stereotype plates. Since that time the process has grown and developed immensely.

In America, if we may quote W. H. Slater, "the expensive method of punch-cutting has long been superseded by the use of the Waldo-Benton matrix engraving machine, which was invented by Mr. Benton, and adopted by Mr. Waldo, manager of the American Typefounders' Co. A drawing in outline is made of the character desired, and the draughtsman reproduces this drawing on a wax-covered plate by means of a pantograph. From one pattern all sizes of a series of matrices are cut, the range being from 4 pt. to 12 pt."

So in a score of ways the original principle of engraving and setting individual letters side by side in the composing stick, transferring the type-pages ultimately to a press, and printing from them, has needed to be augmented by swifter and more economic processes. Modern speed and the vast demands of modern output have dictated new necessities, and the mind of man has supplemented his hand with machines of amazing accuracy and speed. But still, alongside all this, the ancient hand method still holds its own, and much of the work even in a modern printing-office would offer little surprise to Caxton or Gutenberg or the first printers who picked up individual letters and composed them into the printed page.

CHAPTER VII

THE MANUSCRIPT AND PROOF-READING

It will be easily understood that with the many thousands, indeed hundreds of thousands of manipulations necessary for setting the type of a book, the compositor will make errors. Not so much because he is careless — he never is — but because he has to read the type in reverse, thus having to mind his p's and q's. Furthermore, as we have stated, each letter set by hand has to be read again after printing, and to be put back with its namesakes when the type is distributed. It is obvious that types may very easily get into the wrong compartment of the case, and this means that a wrong letter will appear when setting is started again. Then the manuscript itself may not be very legible, and the compositor, setting a sentence from his own mental conception of the copy, may substitute one word for another. It is generally thought that the best person to correct him is the author, but in reality he may prove the worst man for the job. For unless he is experienced, seeing his creation embodied in a new shape—the printed text taking very much less space than the manuscript or typewritten copy—he will eagerly re-read his ideas which are now so easily grasped, and be carried away by them, forgetting all about the missing semicolons or the misspelt words. Or he will—in *le plaisir de se voir imprimé,* as the French so well express is—be so pleased to see his offspring in print that he reads quietly on, with a gentle smile on his lips. And if after the first proof the printer sends him the second, he will be astonished to see what he has not seen before. For now the days of love at first sight are over, and he will compare those stupid printer's errors with his galley proofs—only to find that the mistakes are his own.

But let us suppose that the author who is correcting will avoid both Scylla and Charybdis. Then there are two other things to be borne in mind: his correction-marks should be such that they cannot be misinterpreted; and—he should not alter too much!

The first stricture seems just as reasonable as the second, but the latter especially is more easily said than done. The composition of the entire book, the work as a whole, stands before the author's eye much more clearly in print than in manuscript, and this is the reason that he comes to the conclusion that the paragraph before him would be better if moved to such and such a page; that he finds another passage might be formulated more clearly; that a third really repeats what has been said in other words elsewhere, and that—and so it goes on.

The uninitiated will imagine that such an author has demonstrated

his own incompetence, but if my reader ever essays to tread the author's path he will be astonished at his own vagaries. And any alteration in the wording which causes a line to become longer or shorter is a calamity, for now the following lines also must be set anew, one after another, till the compositor can manage to arrive once more at a full-width line. This means several lines' extra charge; and a consequent search for new printer's errors that may have crept into them. An author who is a little conversant with these matters will therefore think out a wording which precisely or nearly fills the space of the words he is crossing out. He should also take care that each first line on a page has the full width of the printed area; it does not look right otherwise.

The printed page reads well only if it be a well-balanced whole, composed of equally distributed blacks and whites. So the printer's job is to alter even so many *more* lines than the author's alteration comprises, that he does not have the words crammed in some parts, and widely spaced in others. The reader may not discover why, but he soon will be tired of the book if this happens, for nothing is so trying to the eyes as this. Only well-balanced pages read well, and look attractive, in other words, they make an interested reader out of an otherwise indifferent person.

The item "author's" corrections on a printer's bill sometimes is capable of great expansion. The amount arrived at depends very much on the printer's goodwill. Strictly speaking, the printer is entitled to charge for any alteration in the wording made by the author after the text has been set. For the bill on author's corrections the author only is to blame—that vacillating author who has second thoughts—third thoughts, perhaps. A good deal of trouble will be avoided by sending the manuscript only when it has been thoroughly considered, but most writers think they have arrived at that stage when they are still very far from it. The manuscript should be typewritten, paginated, have the same number of lines on each page, bear the name and the address of the author, the title of the book, and should be typed on one side of the paper only. The counting of the words necessary to "cast off"—i.e., to calculate the number of printed pages, and therefore the size the book is going to have—can only be carried out if these rules have been observed. Guesswork would be fatal here! Also italics, quotation marks, bold type, etc., should be clearly indicated before the "copy" is placed into the hands of the compositor.

Much, of course, depends on the kind of book, but generally it will be found convenient for the printer to send two copies of his proofs, one being returned to him, and the duplicate having exactly the same corrections, etc., remaining on the author's desk for reference. If he should want to refer to a previous page, or should wish to see the "caption" of such and such an illustration, as the lines under these are

called, or when he is faced with any of the thousand queries which inevitably arise this duplicate will prove to be invaluable.

The first proof is often pulled from type on the galleys before even page-divisions are made, these are the "galley" or "slip" proofs. They are indispensable if there are to be subsequent additions to the text, or if blocks, diagrams, etc., have to be inserted. After the individual pages are tied up further proofs (now containing illustrations in the text) are usually taken. These are the "page" proofs, which are easily pulled in a small hand-press. Sometimes "sheet" proofs of sixteen or thirty-two pages per sheet are produced which show the "'imposition", viz., the arrangement of the margins. These generally are half as broad at the tops as they are at the bottom. Allowance must be made for trimming of the edges when the book is bound, and for the amount of the centre margins which will be lost by the sewing. We shall speak of this again in Chapter IX.

If there are many corrections a second proof or "revise" may be required after the first. Theoretically, every second proof should be a "clean" one, free from errors—but it never is! The last proof before "running off" the edition is the "press" proof, taken in the press.

Correction marks as now generally used have grown from custom into law. In some countries, Holland and Germany, for instance, committees of experts have been at work to fix and to define the best tokens. Nobody is, of course, obliged to use them, but everyone who has ever printed will wish that all proof-correctors were so compelled. "Delete" has to be written so often, that a shorthand token has arisen. An omitted letter is indicated by a stroke through the preceding one, both being written in the margin, together with the repeated stroke. Several strokes on one page or in one line should be clearly distinguished from one another, thus: | ⌜ ⊢ ⌞ ⊨ ⌡. A wrong letter is crossed out by one of these hieroglyphs, and |**a,** ⌜ **b,** ⊢**c,** etc. is written in the margin. A letter of a wrong fount is treated in the same way, "w.f." being added.

It is advisable to draw a circle round any written words which are meant to be indications to the compositor, and which, therefore, should not be inserted in the text. Otherwise, if the telephone is just ringing again, the next proof may contain something like this: "When man capitals began to reset 10 point his thought" etc.

We now submit to English and American critics the standard correction marks of the Dutch experts, which slightly differ from the English. These differences are given.

	Nº	Omschrijving	Teeken
	1	Letter omdraaien	
	2	Letter[s] wegnemen	
	3	Letter beschadigd	
	4	Gerezen wit zakken [zwart blokje wegnemen]	
	5	Twee woorden van maken of meer wit tusschen brengen	
	6	Eén woord van maken	
	7	Koppelwoord van maken	
	8	Minder ruimte [minder wit]	
A	9	Vet zetten [1j]	vet
„	10	Cursief zetten [1j]	curs
„	11	Spatieëren [1j]	spat
B	12	Groot kapitaal [2j]	gr kap
C	13	Klein kapitaal [3j]	kl kap

Nº	Omschrijving	Teeken	
14	Nieuwe regel		
15	Geen nieuwe regel		
16	In de lijn brengen		
17	Woord[en] tusschenzetten		
18	Omhoog brengen		
19	Omzetten van letters of woorden		
20	Inspringen		
21	Niet inspringen		
22	Correctie vervalt		
23	Interlinie [meer wit] tusschen brengen [4j]		D
24	Interlinie uithalen [minder wit] [4j]		„
	Verwijzingsteekens [5j]		E

Ill. 83. Standard correction marks.

1. Reverse this letter.
2. Delete this (these) letter(s). (English: d).
3. Change battered type. (English: a cross as in 4.
4. Push down space or lead.
5. Insert space.
6. Close up. Less space.
7. Insert hyphen.
8. Take out space.
9. Set in bold type.
10. „ „ italics.
11. Space out word.
12. Set in capitals.
13. „ „ small capitals.
14. Fresh paragraph. (English: f.p. or new par.)
15. Run on, no f.p.
16. Line up even with other letters.
17. Insert word or words.
18. Raise type to correct position.
19. Transpose. (English: trs.)
20. Move type to the right, indent. } In English just the
21. „ „ „ „ left, do not indent. } other way about.
22. Correction erroneously made, type should remain as it was.
23. Put more space between the lines.
24. Take out „ „ „ „

Marks in text | L ⌐ ↑ etc.

Remarks:

A. Parts to be set bold, in capitals, italics, lower-case, etc., are marked by encircling lines, the desired alteration to be written in the margin.

B. "Capitals" are capital letters of the size of the text-type.

C. "Small Capitals" are only $^2/_3$ of this height.

D. In case a number of lines is to be left open this number should be written in the margin.

E. Vary your marks more when they follow closely, and use these to insert letters, parenthesis, etc.

F. If lines have been placed in the wrong order, mark them with their proper numbers, thus 2, 1, 4, 3, etc.

G. Marks 1—14 not to be placed in the text but in the margin only.
„ 15—24 may be placed in the text and *should* be repeated in the margin.
„ 9—13 should be placed in the margin in an encircling line;
directions such as "see copy" to be treated similarly.

H. Spaces which show thus ■■■ should be marked as soon as they appear in the proofs. It may happen also that they "rise" during printing, so the printer has to keep an eye on that while the edition is run off.

CHAPTER VIII

PAPER AND PAPER-MAKING

The art of paper-making came to Europe from the far East. Being invented in China, it spread westward to Persia and from there to Arabia, whence the Moors carried it along the North coast of Africa into Spain. Thus the first paper-mill in Europe came to be erected in Toledo in 1150. In northern Italy paper has been made since about 1300; and in or about 1390 a German, Ulman Stromer of Nuremberg started the first mill north of the Alps. He was also the first to write a book on the making of paper. Precisely a century later the first English reference to paper appears in a book printed by Wynkyn de Worde in 1496, John Tate being named as the maker of "thys paper thynne". Two centuries yet again, in 1690, Wilhelm Rittinghausen, a German from Mühlheim on the Ruhr, erected the first mill in America, at Roxborough near Philadelphia.

After 1500, in Europe, paper more and more took the place of the older material, parchment. Whereas the latter is prepared animal skin, paper is of vegetable origin, and derives its name from the plants of ancient Egypt which the Romans called *papyrus,* a rush which was peeled and flattened for writing purposes. Leaves were often employed direct for this purpose. In ancient times and to the present day in tropical countries, palm-leaves, dried and cut to size, are similarly used without further treatment. Wrapping-paper is supplied by nature in the form of the large leaves of the banana tree, from which neat square pieces are cut, folded, and may be seen thus in piles in every market in the East Indies.

In other regions nature is not so lavish in providing us with such materials, and we must prepare them ourselves from vegetable fibre. Cotton, flax, esparto grass, hemp, straw, jute, and wood provide the greatest variety of paper and boards. Cotton and flax are not employed directly but indirectly. Rags, old clothing, etc., are the modest source of the best and most durable paper. It is not the appearance of old rags, but the quality of their fibre which counts. They are mixed with water, macerated, and sieved, in which process they intermingle and "felt" together into sheets. Vegetable tissue contains fibres and cells, and the former represent the cellulose which is the basis of paper-making. The rags have been chemically cleaned, however, at the very beginning of this process, and the chemicals do not improve the quality of the fibre. The very best paper, therefore, is that made from unbleached rags. But rags cannot nearly supply the immense quantity of paper necessary to our present-day needs.

Paper used for books should have certain qualities: it should be durable and not too transparent, and it should absorb the ink to a given extent.

It must be neither so brittle that it cracks nor so soft that it tears, and the surface should preferably be dull rather than glossy, since a glossy surface is tiring to the reader's eyes. The ideal paper which fulfills all these demands perfectly will prove far too costly for normal use in the cheaper type of books and in popular publications.

European paper-makers have to rely on rags, wood, and esparto grass for their products. Wood or wood-pulp in boards is imported from Russia, Scandinavia, and Canada, while esparto grows abundantly in Spain and North Africa (Pl. XXIV). In China bamboo and the bread-fruit tree, in Japan mulberry shrubs provide the fibrous material. In Java "deloewang" paper is similar, and plants from Madagascar are also used in the production of high-class papers such as are used for costly prints, limited editions, and specials books.

Apart from the fibre, or cellulose, paper may contain various other substances. "Loading" is the name given to china-clay, gypsum, and similar powders which in certain papers is used to fill the spaces between the fibres and so to smoothe the surface and to make the paper more opaque. The last characteristic makes it possible to print on both sides of very thin paper (for small Bibles, etc.) without the ink showing through. The drawback is that such additions do not help to strengthen the paper. On the contrary they will not "felt" together and so do not possess the hold which the vegetable fibres have. They also create other difficulties. In printing books thousands of sheets are moved to and fro in the press, and obviously too much loading raises dust, which will cover the machine and clog the type, especially since at each impression the type is covered with a layer of oily ink eminently calculated to hold the dust, and thus spoil the printing. The only remedy is to stop the press and clean the type with benzine at frequent intervals—an operation which takes time and will therefore cost money. All the oiled parts of the machine—and this means practically all of it—will also hold the dust. It may be imagined that a well-loaded paper is thus no great favourite in a printing-office.

A third component of paper is size, which not only improves the strength, but also prevents thin inks, such as writing-inks, from spreading as they do on blotting-paper. It also prevents thick sticky inks (as used in collotype printing) from tearing the paper to bits.

Paper is either sized with animal size on the surface of the sheets, which are in this case dipped into a solution (a process termed "Tub sized"), or vegetable resin is added to the pulp in the making. The latter method, invented in 1860 by Moritz Illig, a German, produces a very evenly-sized stock. For many printing-processes this is eminently desirable. Sometimes both methods of sizing are applied to the same paper if it is necessary that it should be very "hard sized".

A fourth component often present in paper is the colouring pigment,

without which the paper would generally look a dull, greyish white. Hence the rags are thoroughly bleached to a brilliant white, or, to ensure that the paper shall be bright, a small quantity of blue is added, as the laundress adds blue to our linen to make it appear white. Sometimes blue or greenish hues are desired, but more often than not either white or "toned" (ivory colour) paper is made, this latter giving a warm, rich tone.

Let us now turn to the treatment of the materials employed in the making of papers. In the old days, between 1200 and 1800, paper was made from pure rags and by hand only. This is the most durable of European paper. Later, rag fibres were generally mixed with others obtained from wood, grass, etc.; for the vast increase in the number of readers and the growth of newspapers, magazines, and the like demanded more paper than old clothing and disused rags could provide.

For high-grade papers, however, rags are still utilized. When they come to the paper-mill they are graded and sorted, linen and cotton being separated. Next they are boiled and bleached, and buttons, starch, pins, and other extraneous matter are cleaned away. Now the material must be reduced to fibre. In the early days this was done by hammers under a flow of water. The large, heavy hammers were moved by a water-wheel as we see it in ill. 41. The stamping rods were shod with metal, a revolving cylinder set with teeth lifting each of them in turn and causing it to fall as the teeth move on. But in the eighteenth century a Dutch invention supplanted these methods; and the so-called "Hollander", also called the "breaking engine" because it breaks the rags to pieces, is now generally employed. This consists of an oval trough partitioned into halves, but as the partition does not run on to the narrow ends of the trough a continuous motion of water and rags is possible. A revolving cylinder set with blades serves the double purpose of keeping the fluid in motion of water and of cutting the rags, for the floor of the Hollander is also provided with knives. The rags passing between these and the blades of the revolving cylinder are macerated and soon reduced to pulp, or "half-stuff". The first Hollanders were worked by windmills but now, of course, are driven by modern power. Bleaching is done with bleaching powder, and this completes the preparatory treatment. Linen tends to give the paper hardness, whereas cotton will produce a softer kind which will absorb the ink more readily.

Wood produces the main supply of paper at the present day. It is employed in two forms, "mechanical" and "chemical" wood, names which are derived from the methods of producing the pulp from timber. Mechanical wood is sawdust produced by grinding logs in water. The trunks of trees are sawn into logs, from which the bark is removed. These are then pressed against a grindstone in the pulp-mill, which is usually situated in the neighbourhood of the forests. The process is carried out mainly by machinery, the logs being kept in contact with the stone by

hydraulic pressure. Thus a coarse pulp is made, which is dried and rolled into boards and then shipped to the paper-mill. Here the boards are broken into pieces and made into pulp again. The paper made from it will, of course, contain all the impurities of tissue that were found in the raw trunks. Such paper is apt to be brittle, and will soon lose its colour, turning a brownish yellow under exposure to daylight, as we see when an ordinary newspaper is left lying about for some time. Our newspapers contain approximately 75 per cent. of "M. W. P." as mechanical wood-pulp is generally termed .The resinous substances in the raw material prevent the fibres from felting together, and it is these impurities which account for the disadvantages of such cheap papers. The production of mechanical wood culminated in present-day methods after many experiments by German inventors just before the middle of last century. Since its invention how many million trees from the forests of the world have been transformed as by magic into the papers which feed the unappeasable hunger for news and sensation—the most popular, most transient printing of our time!

A much less coarse and more lasting paper is obtained if the wood is treated chemically, i.e. boiled with acid or alkaline reagents such as sodium or caustic soda. According to the method employed "soda" wood-pulp, or "soda" cellulose, is distinguished from "sulphite". This paper is more expensive than M. W. P. since only 60 per cent. to 80 per cent. of the wood remains as raw material. Again German inventors took an important part in establishing these processes, the best known being Mitscherlich, who in 1874 arrived at the most satisfactory results by long, slow cooking under moderate pressure. A "sulphate" process is employed to produce the strong brown "kraft" wrapping-paper.

Esparto grass and chemical wood supply the paper for the majority of contemporary books. Esparto is dried in the sun in Africa and in Spain, and then shipped to the paper-mills in bales. Here it is dusted, boiled with caustic soda, reduced to pulp in the Hollander, then bleached, by which time the "half-stuff" is ready. Straw is sometimes prepared in much the same way , but is less suitable for good quality stock. Bamboo also has been recently employed.

These various materials may be mixed in varying proportions for different classes of paper. As we have pointed out, newspapers, not needing durability, are composed of mechanical wood to the extent of 75 per cent. A better paper depends upon the degree in which other components are used. The Report of the Society of Arts on the Deterioration of Paper, published in 1898, states that paper-making fibres may be ranged in four classes:

a Cotton, flax, and hemp.
b Chemical wood (sulphite, sulphate, and soda processes).

c Esparto and straw celluloses.

d Mechanical wood-pulp.

The committee recommend as a normal standard of quality for book-papers required for publications of permanent value:

Fibres: Not less than 70 per cent. of fibres of class *a*.

Sizing: Not more than 2 per cent. resin, finished with the normal acidity of pure alum.

Loading: Not more than 10 per cent. total mineral matter (ash).

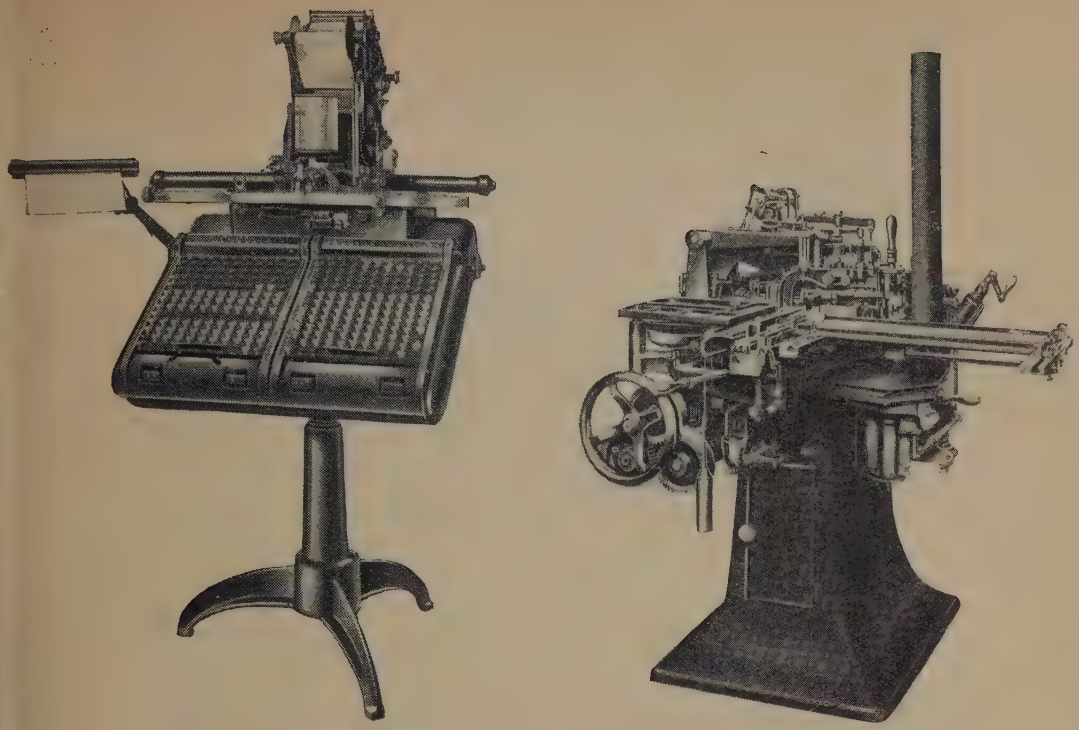
Unfortunately the "Durability Grade One-A" paper, a standard fixed by the special Commission set up by the Library Association, is too costly for the printing of other than expensive books.

Paper is made on one principle, whichever of the materials mentioned are used .There are, however, three distinct methods. First, we have the old hand-process; next comes the cylinder machine invented by Dickinson in 1809 which produces the so-called "Mould-made"; and finally the paper-making machine invented by Louis Robert in 1799, which was improved in collaboration with Gamble and the Foudrinier brothers. This machine produces endless reels of paper, cut to sheets only if desired. It is the chief source of our paper-supply to-day. It was mainly due to the altruistic endeavours of the Englishmen who took an interest in the machine at the beginning that results proved so good, for profits were sacrificed for ten years to this end. In 1818 the first machine in Germany came into action; and it was 1822 before one was set up in France, whereas in 1823 in England no less than thirty-eight machines were operating.

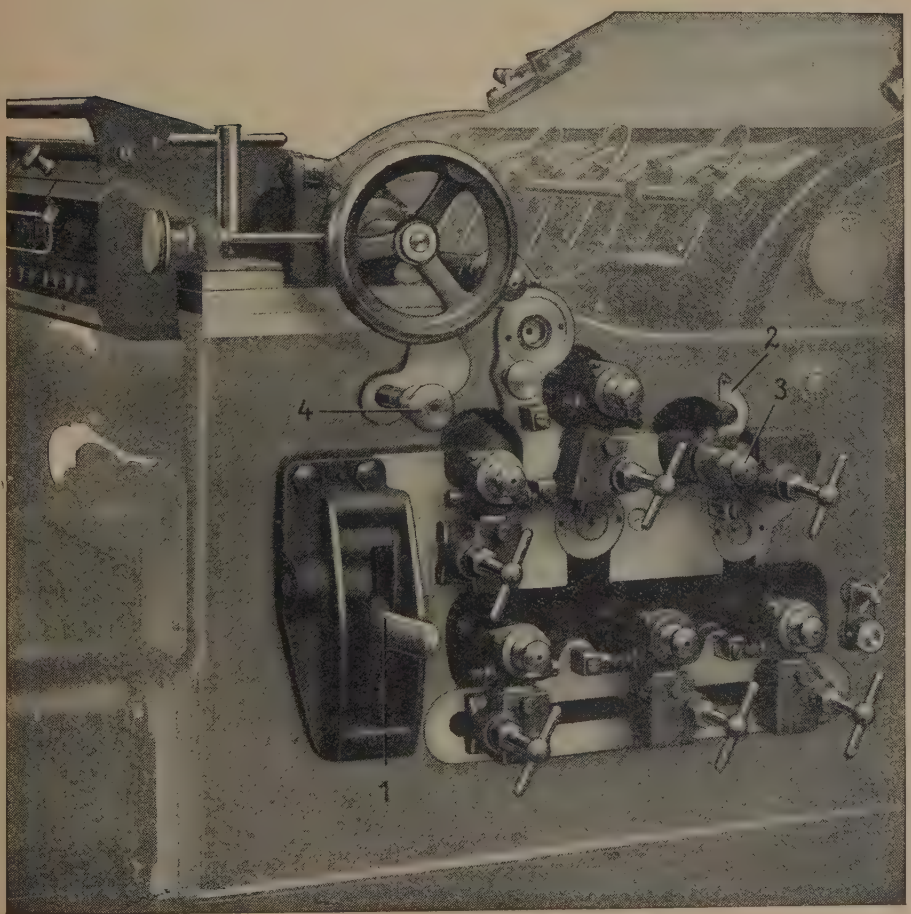
Between the Foudriniers and their co-operators differences arose concerning rights and patents—echoes of the early quarrels in the days of Gutenberg—and in consequence the Foudriniers lost their entire fortune of £ 60,000 and went bankrupt.

Although the underlying principles of the three methods of paper-making are the same, they produce very different kinds of paper. For making by hand the pulp is taken from a vat by the vatman with the aid of a mould, a sieve of metal wire which is dipped into the pulp. A frame, the deckle, prevents some of the pulp from flowing off the sieve, which is shaken to and fro to cause the fibres to mix. The deckle is now removed from the mould (Pl. XXIV), which is taken by the coucher who turns it upside down on a piece of felt and thus transfers the layer of paper-to-be to the felt. Piles of felt and paper, thus alternating, are now submitted to pressure to remove the superfluous water. This method is still the best; the sheets are sized individually.

The wire of the mould will, of course, produce a slight indentation in the layers of pulp which, when dry, form the sheets. Until 1755 this mould was a hand-made sieve of thin parallel wires, strengthened by cross-wires at a distance of about an inch. This framework shows as slightly transparent lines in the sheet. In that year Baskerville invented

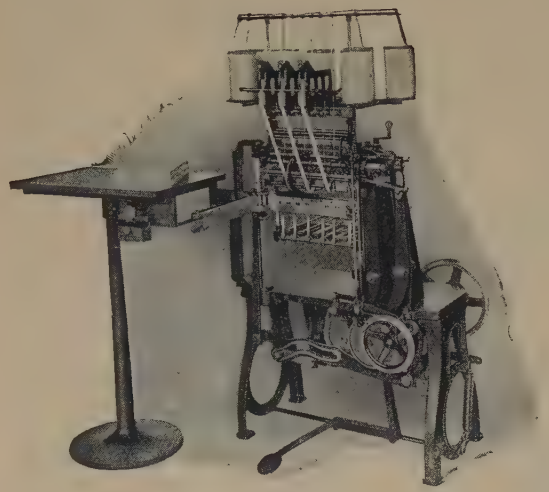


The Monotype keyboard and casting machine.

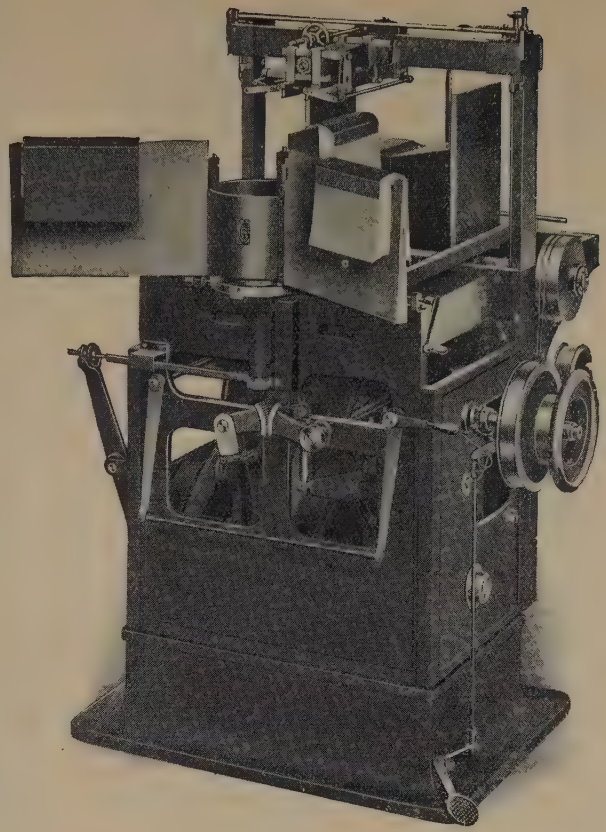


The inking rollers of the cylinder press.

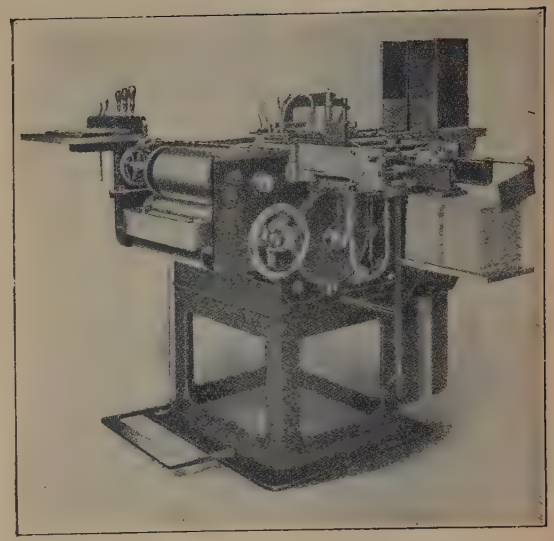
Portrait of the Letter-Cutter Fleischman in the Enschedé Typefoundry. From Enschedé's Proef van Letteren, Haarlem, 1768.



The Smyth sewing machine for sewing schoolbooks, dictionaries, catalogues, novels, etc.



The Smyth bookbinding machine.



The Smyth machine for making book-covers.

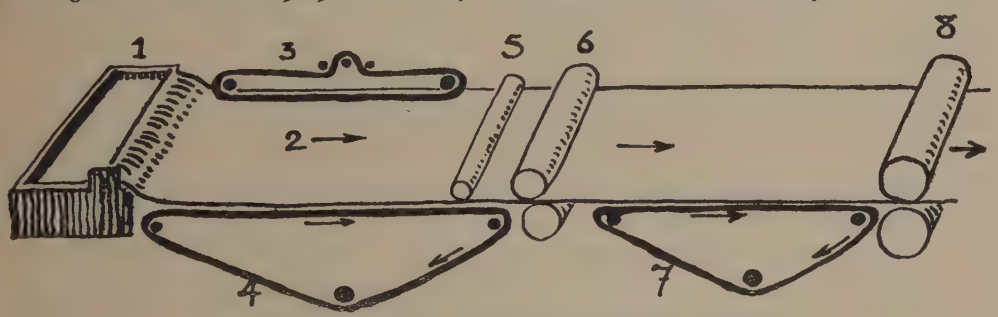
The making of paper. Drying the esparto grass; North Africa.

Camel transport of esparto grass.

Paper making by hand. By courtesy of Messrs. Barcham Green & Sons, Maidstone, England.

a mould of woven wires, and the paper made on such a sieve does not show lines but an extremely fine diamond mesh. Hence this paper is called "wove". The "watermark" is produced in the same way as the lines in laid paper, brass-wire initials, or other designs, reproducing themselves as semi-transparent ornaments in each sheet.

Hand-made paper will show a typical rough edge caused by the pulp flowing under the deckle and creating the "deckle edge", a factor sometimes imitated in "machine-mades", as it was the mark of excellence during many centuries. The same applies to the wire lines of laid paper, which are nowadays pressed into paper made on a "wove" mould and produced on a Robert-machine. Before turning to this method, however, we must mention "mould-made" where the sieve, having either wove or laid wire, is shaped like a drum. Since it is round, this kind of sieve cannot be shaken as the vatman shakes the flat variety, for the pulp would then be shaken off at once. This makes all the difference, as the fibres do not mix so well. The drum is turned slowly over, and the sheet passes on to the felt mechanically. Thick papers of good quality such as those for *editions de luxe* are generally made in this way. Laymen often will not notice the difference between this and real hand-made papers, but experts recognize it at once, for the "look through" of such a paper is very different and less lively.



Ill. 84. Diagram of the Robert paper-making machine.

The third method is very much quicker. Its basis is rotary motion with its consequent saving of time (ill. 84). The sieve is an endless ribbon moving over rollers, the top being held in a flat, horizontal position (4). On this the pulp is allowed to flow from the vat (1), and as suction from below drains away the superfluous water, the paper dries slightly as it moves in the direction of the arrow (2). To prevent it from flowing off at the sides rubber strips (3) resting on the sieve act as dykes. They must also move along with the sieve, of course, and are kept adjusted by pulleys. (For the sake of clearness our diagram shows one only.) The shaking motion of the vatman's manipulation is imitated by a mechanical action which shakes the sieve to and fro sideways as it rapidly moves onward. The pace at which it moves

nevertheless causes the fibres to lie mainly in the "machine direction". Both suction and the onward movement are stronger than the sideways motion, and paper thus made will always have a different "stretch" between length and breadth. This fault seriously affects its use for colour-printing, paper being very sensitive to dampness, and the slightest difference being sufficient to ruin the "register" of the superimposed printings of the different colours. Endless felts (7) and rollers moving in the same fashion as the wire sieve help to dry the paper, which is now passed over large heated drums and thus made completely free of moisture. The web is then passed between other cylinders (calenders) which render the surface smooth. It is finally wound into reels.

The surface of paper thus made is sometimes given a laid appearance in imitation of hand-made sheets. This is effected by a special roller, the "dandy", on which the lines of laid are engraved to be pressed into the paper while it is still wet.

Calendered paper will be considerably smoother than the uncalendered, which is called "machine-finished", or briefly "M. F." Fine half-tone blocks, however, demand a still smoother surface in order to print well, so for such purposes the paper is given a special coating of china clay. These coated or "art" papers may be compared to a glazed tile. The surface they present is a smooth layer of clay which adheres to the paper by means of caseine and which is applied by means of wire brushes. This treatment may be given to one or to both sides of the paper; and, however impossible it may be to dispense with it, the disadvantages are many. The paper becomes very brittle, very glossy, and also very heavy. Matt art papers have been tried, but they do not take a very finely screened block so well, and illustrations tend to look dull on them as compared to those printed on "art". "Imitation art" is the name given to paper when the clay is mixed with the fibre instead of being applied later. As we have said when dealing with "loading", this tends to make the paper less strong.

For the printing of books and illustrations the surface smoothness of the paper should be in ratio to the fine lines or dots which constitute the type or the blocks to be used. Line blocks ("zinco's") will print on any sort of paper, rough or smooth, hard or soft.

Half-tones with 65 lines to the inch print well on common newspaper, whereas 85 screen is suitable for ordinary, common "printings". A super-calendered paper will give good results for the printing of 100-screen, "imitation art" allows 120 screen to be employed, 133 to 150 screen will require a good class "art paper". Very fine screens, 175 and 200, are chosen when minute accuracy is desired, and demand the very finest art paper. As metal formes are not elastic the paper should be soft enough to lie smoothly on the press. Fairly rough, old hand-mades require a moderately heavy letter; or must even

be damped or printed upon before sizing, as was done in the old days. A coarse paper will naturally require more pressure during printing and a fuller flow of ink, but these methods tend to make the printing heavy and less sharply defined.

Modern science has its part in the testing of papers. Fibres are examined microscopically, and the microscope is used also for investigating the character of loadings. A second method is physical testing, which records the strength, wearing resistance, opacity, weight, and thickness. Again paper is examined chemically to disclose the nature of the size and impurities; further it may be burnt, and the nature of the colouring pigment employed, deduced from the ash. But the experienced paper-dealer will probably depend upon empirical tests without the aid of chemicals or apparatus, and by tearing, rattling the sheet, wetting, stretching, etc., will know if the paper suits his particular purpose.

The sizes of sheets used in printing ("printings" they call them to distinguish from writing- and wrapping-papers) agreed upon by the Federation of Master Printers of Great Britain and Ireland, are as follows:

Large foolscap	17	$\times 13\frac{1}{2}$
Crown	20	$\times 15$
Large Post	20	$\times 16\frac{1}{2}$
Demy	$22\frac{1}{2}$	$\times 17\frac{1}{2}$
Medium	23	$\times 18$ (sometimes 24×19)
Royal	25	$\times 20$
Large Royal	27	$\times 20$
Imperial	30	$\times 22$

By multiplying the figure in the second column by two we get the measurement of the double sizes of these denominations.

Most of the names and sizes derive from old water-marks. Royal and Imperial were sizes fixed in Bologna, Italy, and cut in stone about 1500. Actually the sizes of papers are in need of some such point-system as that which has now superseded the old names and eratic ratios of the old types .Old measurements such as the *sectio divina* or *sectio aurea* have been employed by early printers to arrive at a good shape for a sheet of paper. Perhaps with a view to exports, the metric system is more and more taken into acount by English paper-makers in their sample-books. But it is not realized in America and Britain even yet that the "French" metre has done away with obsolete systems, such as yards, feet and inches, in all continental countries, for neither Britain nor America were conquered by Napoleon who rid the rest of the world from them. America has only attended one meeting of the International Federation of National Standardizing Associations (the I. S. A.), and Britain none. I. S. A. principles operate in Austria, Belgium, Czecho-

slovakia, Finland, France, Hungary, Italy, Japan, the Netherlands, Norway, Poland, Roumania, Sweden, Switzerland, Denmark, Germany, and the U.S.S.R.

"The purpose of standardization of paper is to replace those arbitrarily chosen, by a well-devised system of sizes", says the I. S. A. The system devised is based upon:

a) HALVING. Two successive formats of a series of sizes are obtained by halving or doubling. Consequently the surface of the two sizes are in the ratio of 1 : 2 (Fig. 1).

b) SIMILARITY. The formats are similar one to another. From a and b the equation $x : y = 1 : \sqrt{2}$ is obtained for the two sides x and y of a format (Fig. 2). Consequently the ratio between both sides is the same as that of a square to its diagonal (Fig. 3).

c) SYSTEM OF MEASUREMENT. The metric system of measurement has been adopted for the paper sizes. The surface of the basic format is equal to the metric superficial area (square metre) **i.e.,** $x \times y = 1$.

d) BASIC SIZE. According to the three principles, the two equations $x : y = 1 : \sqrt{2}$ and $x \times y = 1$ apply to the basic size with the sides x and y. The basic size, a rectangle having a surface of 1 m^2, therefore has the sides $x = 0{,}841$ m and $x = 1{,}189$ m.

e) A-SERIES. According to principle 1, the A-series is obtained by continually halving the sizes obtained from the basic size.

The size A4 (210×297 mm.) is recommended for business-letter paper, it is also the preferred size for periodicals, etc.; size A6 (105×148) is suitable for international postcards (Decision of International Postal Union, 1925).

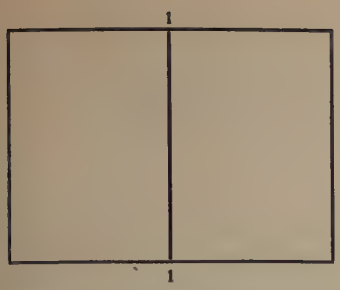
I. S. A. Bulletin, No. 7, August 1934.

The address and telegraphic address of this organization is:

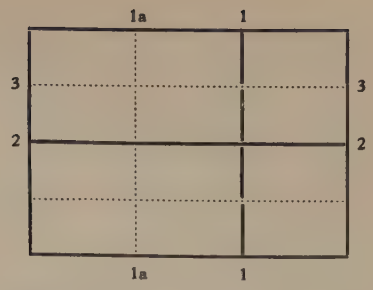
Basle, Switzerland, 76, Rennweg, T.A. "Isafederat".

By permission of the "Hoofdcommissie voor de Normalisatie in Nederland", The Hague.

It will be readily understood that a system according to which halving produces a sheet of the same format as the unfolded sheet, and in which the surface is equal to the area-unit, has its advantages. This had already been suggested to other countries by Germany in 1911. The usual way of folding sheets is as follows:

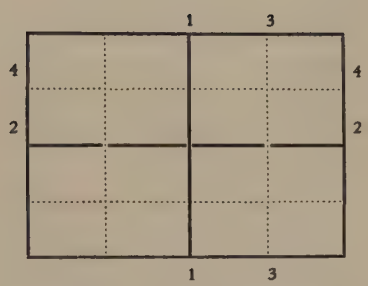


Folded once: "folio" = 4 pages to the sheet

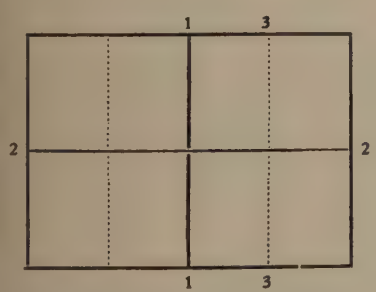


Folded in two, then in three: "duodecimo" (12mo) = 24 pages to the sheet

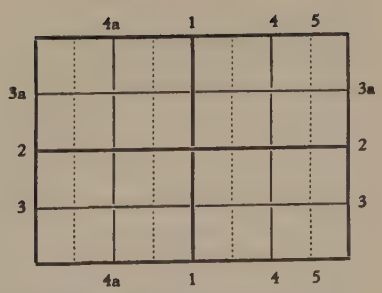
Folded twice: „quarto" (4to) = 8 pages to the sheet



Folded four times: "Sedecimo" (16mo) = 32 pages to the sheet



Folded three times: "octavo" (8vo) = 16 pages to the sheet



Folded five times: (32mo) = 64 pages to the sheet

CHAPTER IX

THE LAY-OUT AND BOOK-ARRANGEMENT

In the previous chapter we have seen that a sheet may be folded in many ways, thus producing books of very different sizes and format. These are decided upon by the publisher, unless he asks the advice of an artist book-builder, who designs the book for him, fixes the printed area, the margins, the type, the paper, and so forth. Sometimes the author himself may be this artist; he may even draw his own illustrations; but that, of course, is an exception to the rule.

Everything in this matter depends upon the book-to-be. A dictionary for example demands a very different treatment from that required for a volume of poems, and an ancient Greek tragedy will require a more dignified apparel than a common detective story or a cheap thriller. Fashion will also have some influence. No publisher nowadays will dress his books in Victorian furbelows, simplicity and straightforwardness being preferred to elaborate decorations. Large sizes suit important, richly-illustrated works. Manutius and the Elseviers were famous for their very small books—duodecimos which best suited the travelling scholars of their day.

In the mediæval monastery, where the books remained *in situ,* large folios were desirable. Books also had a decorative function in churches and chapels, where the sacred rites demanded service-books of impressive format and rich decoration. But practical reasons also made large dimensions necessary: one book was surrounded by many singers, the whole choir using a single copy, which therefore needed bold lettering, large pages, and a lectern to be of any practical use. Now books are no longer chained to altars, as in the days of Pope Gregory the Great, who, incidentally, was concerned with fixing the contents rather than the books.

A lay-out will generally be a pencil-sketch, which indicates the placing of the text and the illustrations, and indicates the type-sizes. This is simply a rough design or dummy. The exact wording will only be written on the lay-out if the text be limited to a few words. On Pl. XIX we have an interesting example of the lay-out of a title page—an important item this, for one that is "friendly to the eye" may make a buyer although generally the dust-jacket is relied upon to perform this magic. Nevertheless, the general impression caused by the printed pages and the type is not to be underrated as a selling agent.

Margins also are of importance in their power to add to the attractiveness of a book. If we compare the Greek manuscript (Pl. II) with the Roman inscription in stone (Pl. I) we realize that the former requires margins to hold the text, whereas the latter does not, since a stone is

not held in the hand. For this same reason in designing a book we make the top margins narrow, and the bottom and outer margins wide. Moreover, as Morris has pointed out, the unit of a book is not a page, but a pair of facing pages, so we must not have the inner margins too wide, the "fore-edge" and the "tails" being the "handle" of two printed pages. The current view, however, is that small books are held in one hand, so wide margins are sometimes allowed for in the centre (the "back") in order to leave room for the reader's thumb.

Alongside these practical reasons are the aesthetic ones. The vertical character of octavo, for instance, is expressed more strongly by extra wide lower margins, the "tails". On the contrary, oblong books may have their width accentuated by a wide "fore-edge", and not too much "head". In any case we must bear in mind in arranging margins that we have to allow about a pica for "trim" (the cutting off of the edges and folds of the paper), and that similarly the width of the "back" margins on a flat sheet is more than when the book is bound, especially if it is to be a thick volume. One must also bear in mind that a page if set solid can do with narrower margins than a "leaded" page, for the white margin acts as a frame to the whites in the printed area.

Old books were often printed in two columns with very little in the way of "whites", the fresh paragraphs being indicated by hand-coloured initials. With our large editions to-day we can no longer do this by hand, and printing in colour means an extra "working" and therefore much extra cost. So now we indent to show the beginning of new paragraphs, and this use of white in the printed area demands a wider frame of margins round it. If we do not indent, we speak of the text matter being "set flush". Or we can have the first lines of paragraphs projecting at the left: a method described as "hanging par".

It must be borne in mind that the deckle edge of paper should never be trimmed off. This edge used to be the criterion for hand-made paper, and we do not willingly forego such a mark of aristocracy. On the other hand, since rough edges cannot be cleaned and so gather dust, the top, or "head" margin, must always allow for trim, otherwise the book will soon look dirty.

In scientific works and school books many divisions and subdivisions are often necessary. They demand CAPITALS, SMALL CAPITALS, **BOLD** or *Italic* letters; but this does not improve the general aspect. A heading set in type which differs from the rest certainly lays stress on such titles; but it looks less artistic than when one design is employed throughout and whites and blacks are well related.

The width of the type chosen, although of no account in a single letter, becomes important if multiplied by hundreds of thousands, as it must be in most books. We have noticed this in Chapter I in connexion to the work of the Roman book-scribes. Apart from the width of the lines,

the character of a page is greatly influenced by the type chosen, as may be seen by demonstration.

This line is set in twelve point ("Mediæval").

This line is set in twelve point ("Futura").

This line is set in twelve point ("Cochin").

A book is composed of the text proper, which has pages numbered 1, 2, 3, etc., in Arabic numerals, and of "prelims." i.e., preliminary pages, to which Roman numerals are often given. This is done for a sound reason. The prelims. are usually printed last of all, since they comprise not only the title, but also the Contents, List of Illustrations, etc., and the exact number of pages thus to be added cannot be decided upon beforehand but only as the printing continues. They must, therefore, have a numerical order of their own, made after the text is ready.

The order of these pages is an important part of book make-up. The title page, always a right-hand page, is preceded by a "half-title" which also must be a right-hand page. This is preceded by one or more blanks or "fly-leaves". The half-title mentions only the name of the book, leading the way, as it were, to the full title and avoiding the feeling of a too abrupt beginning. The full title bears the name of the work, the author, illustrator, or other contributors, the translator in the case of a translation from another language, and the publisher. It often bears the date as well. On its back the "imprint" (name of the printer) and a record of the various editions of the work finds its suitable place; sometimes with technical details of papers, type, etc., employed. These details may grow into a few sentences, and form a definite "colophon". Old printers usually had the colophon at the end of the book. The title page often became quite a long story in the old days (compare ill. 62 with more recent examples). "Printed for John Garrett as you go up the stairs of the Royal Exchange in Corn Hill" is typical for its 1718 atmosphere. To-day we are all for simplicity; and, except for deliberately archaic effect, we do not dress our title pages in these Sunday clothes, nor ornament them too lavishly. Well-placed lettering and nothing more is our contemporary ideal. The setting of such a page, without antiquated "borders"—a framework of lines or ornament, which is entirely superfluous since a printed surface is not a picture demanding a frame—is not an easy task. To secure a type that is neither too large nor too "airy" the designer must solve many problems, and the border is often resorted to only to camouflage this difficulty.

If there be a frontispiece it generally precedes the title page; or, if it has some connexion with the foreword, it may face this. After the foreword the contents and list of illustrations follow, and errata—if such have crept in—also precede the text itself. Appendices and index are

placed at the end of the text, and the book ends, as it began, with one or more blank pages. "*Corrigenda et addenda*" are given one or more pages of their own.

In the 17th and 18th centuries ornaments, flowers, and fleurons, were abundant. The letter, however, should always remain the main thing in a book destined for reading. Footnotes are unavoidable in scientific works, but they generally spoil the appearance of the page and should be avoided wherever possible. In rare instances commentaries demand more space than the text itself. In these cases they are printed round it, often in another letter: Gothic and Roman, for instance, may be composed to effect a decorative synthesis of great beauty.

It is certainly not within the power of everybody to give a book its proper size and suitable thickness. I have before me a book measuring about 5 by 7 inches, and being nearly 2 inches thick! Obviously there are far too many pages—too many because they are too small and so run to over five hundred. Moreover, since the work is a technical treatise, one must look up preceding or subsequent pages every now and again, for reference to other chapters frequently appear. Here is an instance where the book should have been made double its present size. It could thus be considerably less thick and easier to manipulate. As it is I cannot leave it lying open or it will close itself as if it had a spring in the binding. This, always undesirable, is particularly so with a technical book which calls for cross-reference to other works as one reads. It should be possible for the student to leave it quietly until other authors have had their say, and then to resume where he left off; but how is this possible with a book which almost jumps from the table if it is not held tightly with both hands?

Let us examine this little monster more closely. How has it been composed? It begins with a green fly-leaf, then follow:

I. Blank.
II. Advertisement (earlier editions of the same work).
III. Half-title.
IV. Frontispiece.
V. Full title.
VI. Imprint.
VII. Preface by the Editor of the series of which this book forms part. This continues to page XI.
XII. Three quotations from famous authors.
XIII. Foreword by the Author. Continued to page XXII.
XXIII. Addenda and Corrigenda. Continued to page XXVI.
XXVII. Not at last comes the Contents. One must search for it among these excessively numerous preliminaries . . . . a great drawback this, for the contents are a guide to which one

wants to have access at first glance. Contents continue to page XXXII.
XXXIII. Sub-title of the first part of the book.
XXXIV. Diagram.

At last, on the 35th page the book begins. The text continues to page 406, after which this game of hide-and-seek keeps us busy to page 500, about 100 pages more being added in this way:

407. Title page for the notes concerning the reproductions.
408. Blank.
409—430. The Notes.
431. Title page to the reproductions themselves.
432. Blank.
433—480. Reproductions.
481—488. Notes on the Reproductions again.
489. Title page to the Index.
490—500. Index.

After which several unnumbered pages follow, containing details of works from the same series.

In order to facilitate the binding of sheets after printing and folding, they are each given either a number or a capital letter, or a 2-em black on the back where the fold will come (the "black step" method). This number or letter is called "the signature" of the sheet, and indicates the order of the folded sheets. The black steps indicate this by their position higher or lower on the successive sheets, which may thus be verified at a glance; but this method is only advisable for cheap work, as the ugly steps will show at the opening of every new sheet when the book is opened. In lettering sheets printers usually leave J, W, and V (they often omit U also).

A dust-jacket is now usual. It exists ostensibly to protect the binding, but no small part of its task is that of attracting the prospective buyer. Expensive three-colour printing, vivid illustration, and striking lettering all try to suggest interesting contents. The idea is not new. In 1646 a lover of books complained that the binders and publishers "give the books such a beautiful appearance that you would think none but gods and goddesses were to be found behind this grand façade, but if you walked within, you were soon to realize that nobody was at home". This, unfortunately, applies to much of our so-called "fine" printing: books are chosen to demonstrate printing possibilities which in many cases are not worthy the technique lavished upon them. Again it is no new phenomenon, as witness the case of such masterly works as the "*Poliphilus*", printed by Manutius.

Illustrations which can be printed on the same paper as the text are to be preferred, for the sake of the greater unity of the book. In

this respect line blocks have an advantage over half-tones, which demand a specially smooth paper. If the whole book is printed on such „art paper" it will be very heavy, a large percentage of the book being nothing more than clay. Illustrations of small size, printed in the text but narrower than the lines of the text, may be given a caption beside the block instead of under it, so as to fill the empty space. Large illustrations are given a page each; "uprights" facing uprights, and "landscapes" facing landscapes as much as possible, in order to avoid turning the book sideways more often than absolutely necessary. Indeed the good book-builder will endeavour if at all possible, to avoid arranging illustrations sideways upon the page. He will often sacrifice the size of an illustration and leave an exaggerated margin at the foot of the page in order to keep the pictures the same way as the text. Specially printed illustrations on art paper, if needed here and there in specific positions in the text, necessitate "guarding" or "pasting in"; but if the position in the book can be approximate they will be inserted behind or between the folds of the sheets. If there are large numbers of half-tones, it may be best to print them on whole sheets and insert them in a separate section at the back of the book after the text.

We must not end this Chapter without a warning to the reader. The present book is *not* a specimen of a well-arranged book; it is a conglomeration of very heterogeneous elements, just what a book should not be. But we hope we may be forgiven, as it is only with the object of giving him a bird's-eye view of many and varied possibilities that we have thus sinned against the fundamental laws of the book beautiful.

Tailpiece, designed by
Flora Kendrick. By courtesy of Arthur's Press, Woodchester, Glos.

CHAPTER X

PRESS-WORK

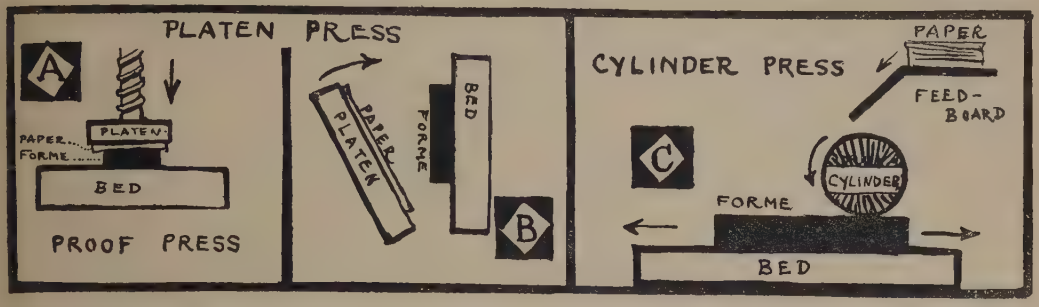
The early presses, as shown in illus. 39, consisted of a table-top, the bed of the press, upon which the type, the "forme", was placed. It was inked by means of a leather or felt ball, filled with horsehair, and by moving it to and fro in a rocking motion the printer spread the thick and sticky ink evenly over the type. Because other portions of the forme might be smeared with ink, a mount called the "frisket" was placed over the forme. It had openings cut to size of the printed areas. This frisket was folded over the "tympan", or part on which the paper was laid, after which both were folded over again so that they rested on the inked forme. The frisket thus prevented the paper from becoming smudged when it came down towards the inky surface. Now the "platen", a plank, was screwed down by means of a screw with a large handle, and in this way an impression was made. Our illustration shows one man inking the forme with two balls, and another one placing a sheet of paper into position. Every time an impression was made these manipulations were repeated.

Buttresses from the ceiling gave the necessary resistance for the pressure, as may be seen on Plate XL. In the 17th century the Dutch printer Blaeu invented a wooden press which could be worked without these buttresses, and on these principles Lord Stanhope constructed the first iron press in 1807. Present-day platen presses of this type are still employed in every block-maker's shop for "proofing", and the "Albions" on which the Kelmscott, the Ashendene, and so many other fine books were produced are of this character.

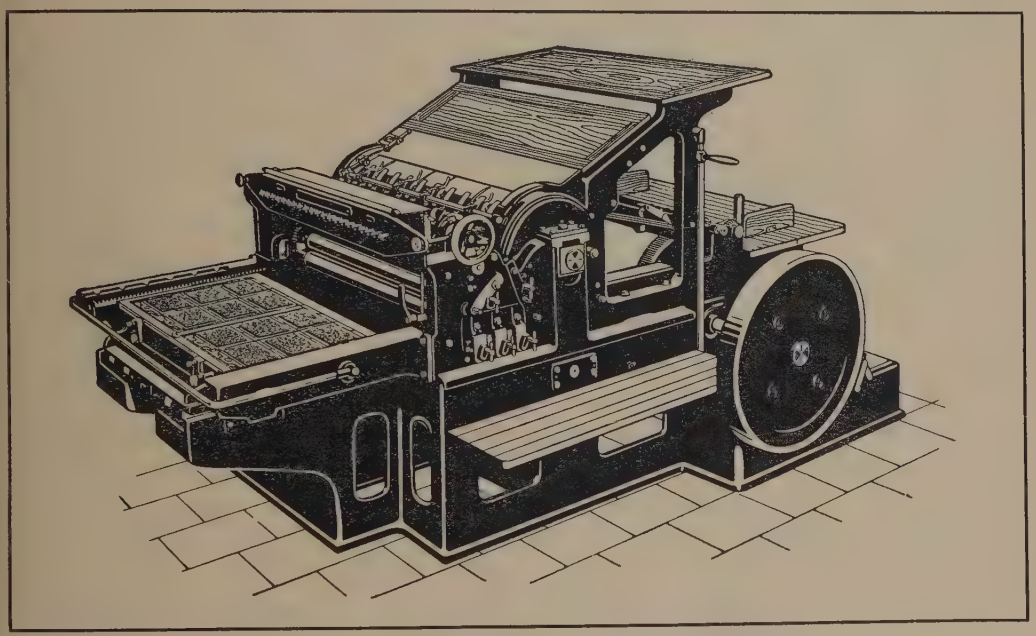
For swifter working another class of platen has been devised, the forme being placed in a vertical position (ill. 82). It may be intended for "light jobbing" and driven by hand, or it may be provided with an automatic feeder and driven by electricity (Plate XXXII), in which case the productive capacity of such a heavy ("art") platen may be raised from eight or nine hundred to a few thousand printings per hour. Such platens are fitted with automatic ink-ducts and, instead of one inking roller, they have three or four "distributors" which deposit a very even film of ink on the type or the blocks. Such presses are very suitable for small-sized printing. They can produce fine colour-work with perfect "register", as the proper imposition of colours upon one another is called. Automatic feeding is arrived at by air-suction. This lifts the top sheet of a pile and it is then put into its place by grippers.

Rotation, however, is the principle applied to larger-sized work, for if a flat platen were used, immense pressure would then be necessary.

Large machines therefore have a cylinder to press the paper on to the type, which is moved across it. Or rather, the type passes along under the cylinder. This machine was invented by the Germans Koenig and Bauer



Ill. 85. Diagram of presses. A, Platen press with horizontal platen; B, with vertical platen; C, Flat-bed cylinder press.



Ill. 86. Flat-bed cylinder press (Exquisit, Heidelberg).

who share the honour with William Nicholson and John Walter of "*The Times*". In 1814 this newspaper was being produced at the rate of 1,000 four-page sheets an hour. "Up to this time the hand press was the only means by which printed impressions could be secured, and the speed rarely exceeded 150 single prints an hour." Once the cylinder was introduced, "Inking by dabbing with pads or pellets gave way to rolling with composition rollers of the present type", writes Mr. A. H. Maddox.

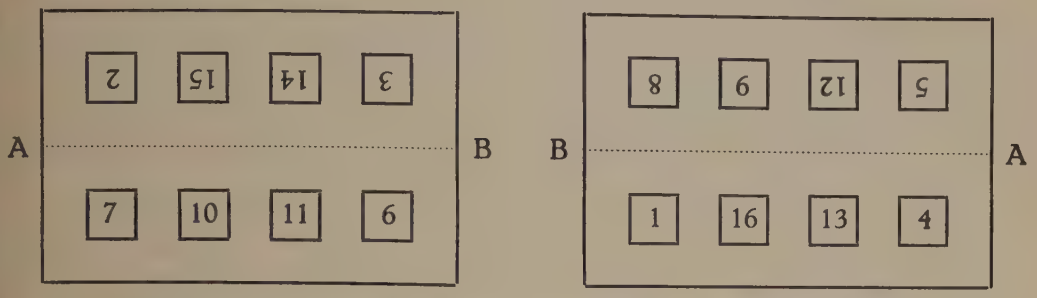
The "forme", however, remains flat (Ill. 85 and 86). This "flat-bed" machine is known in England as a "Wharfedale", since Otley, a centre of engineering in the valley of the Wharfe, has been the birth-place of many presses of this kind. The "carriage" on which the forme is placed is constantly travelling to and fro, passing the inking rollers first and the printing cylinder next. Meanwhile a sheet of paper has been taken from the feed-board, and grippers again hold it on to the cylinder. After each revolution brake-pressure brings it automatically to a stop. The printed sheet is taken from the cylinder by other grippers and guided over tapes, after which it is deposited by the "flyer sticks". The ink-duct is a long trough from which the flow of ink is automatically regulated, and a "feeding" roller and several "distributors" transfer it to the "ink table", thus ensuring the application of an even layer of ink to the forme.

The two-revolution machine is an English invention which ensures still greater speed. The cylinder of such a "two-rev." is kept in *constant* motion, each second revolution being performed without contact with the type, the alternate revolutions only producing an impression.

Books are printed on "flat-bed" machines. Newspapers are produced on rotary presses, where maximum speed is necessary in the production of enormous editions in a few hours. By means of stereotyping, cylindrical "formes" are obtained, making continuous printing possible. Of such presses every revolution of the cylinder means an impression, not every other one. The large presses of this kind print on reels of paper, and by making several stereos of the same type *multiple* forms may be printed from. Single-reel machines produce something like 18,000 papers of 8 pages each per hour, and large machines with several "lines" of units turn out some 750.000 newspapers of 24 pages each per hour. Speed, in such a case, is of greater importance than fine printing.

When half-tone blocks have to be printed together with the letter-press, special care must be devoted to adjusting the cylinder, as each half-tone dot should be given its just proportion of pressure. Since there are some 22,500 dots in a block of about 10 $\times$12 inches, much depends on the printer's ability in "making ready", as this adjustment is termed. It is achieved by "overlaying", i.e., covering the printing cylinder with carefully cut-out pieces of paper, which make it slightly thicker and thus cause it to give more pressure on the corresponding portions of the forme. It is also effected by "underlaying". This means that the block itself is raised by pasting thin pieces of paper on to the wood-block on which the metal printing surface has been mounted. Such hand-cut overlays are produced from impressions, which indicate precisely the parts which require strengthening. Mechanical overlays are made in zinc- or chalk-relief. If an impression of the block is made on a very thin sheet of zinc this may be etched, and thus a relief is obtained. Chalk reliefs are made on paper coated with chalk.

For bookwork it is now customary to print at least eight, but generally sixteen or thirty-two pages in one printing. If you fold a piece of paper three times, and if, without cutting the edges, you number the pages obtained in order, you will see how the printer has to arrange his type so as to get his pages right:



Ill. 87. Imposition scheme. Two formes of eight pages each, one backing the other.

A—B being a fold which represents the "head" of each page. Imposition schemes of 12, 32, and 64 pages are, of course, proportionately more complicated.

A few words may be added on colour printing, which now takes such an important place in our book-work. For three-colour work the order yellow, red, blue is customary. Such inks must be fairly transparent because they have to co-operate to arrive at the desired results; thus, the blue must allow the yellow to shine through when a green is desired, etc. Certain colours, such as emerald green or vivid orange, cannot be built up satisfactorily *in pigments* which represent yellow, red, and blue *light*—vastly different from paper and ink. Where these hues appear in the original, four blocks and four printings are required. Tri-chromatic inks are now standardized, and in half-tone colour-work engravers adapt their filters, that is, their colour-separation, to these. They specify the inks employed for their proofs and add these details to the set of "progressive" proofs with which they assist the printer to obtain the best results.

Here we would again refer to our Appendix, where the reader will find several specimens, demonstrating three- and four-colour letterpress printing, in which the results arrived at in these excellent reproductions of paintings depend to a great extent on the quality of the fine inks employed. The effect of glossy "art" and "semi-matt" paper, in relation to which finer or coarser "screens" are employed, may also be studied from the "Portrait of a girl" and the "Study of Flowers".

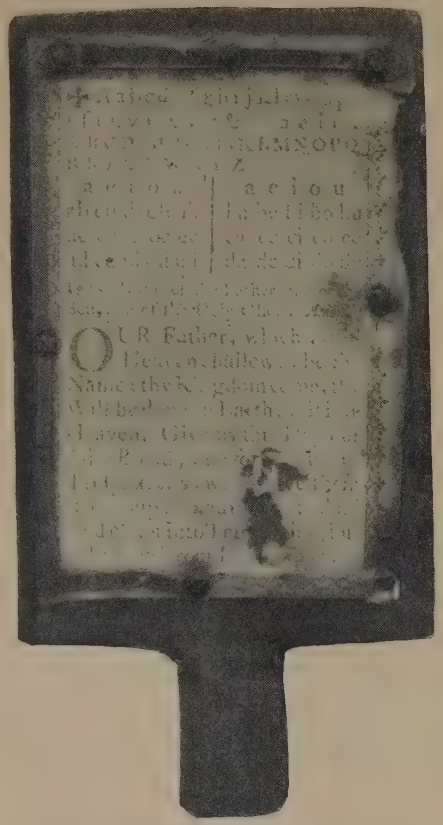
Modern printing has caused many special inks to be invented. We may draw attention to the so-called "double-tone" inks, suitable for half-tones made with a not-too-fine screen. These inks consist of a slow-

drying ink of normal composition, to which is added a dye-stuff soluble in the varnish medium. This varnish is absorbed by the paper, and in this way every half-tone dot develops a halo of the dye colour. This gives unequalled richness to the print, but a suitable paper must be chosen, and the blocks need to be etched more deeply than usual.

Matt results may be arrived at by the use of matt papers, but also special matt inks, either water- or oil-inks, are now made. The former remain soluble and therefore are not suitable for the production of book-jackets and similar purposes, but may be used to advantage for plates. Their transparency is not easily equalled by matt oil inks. The "Paramat" inset in water-inks (see Appendix) is printed from rubber plates cut by hand, the rubber being fixed on to thin metal plates.

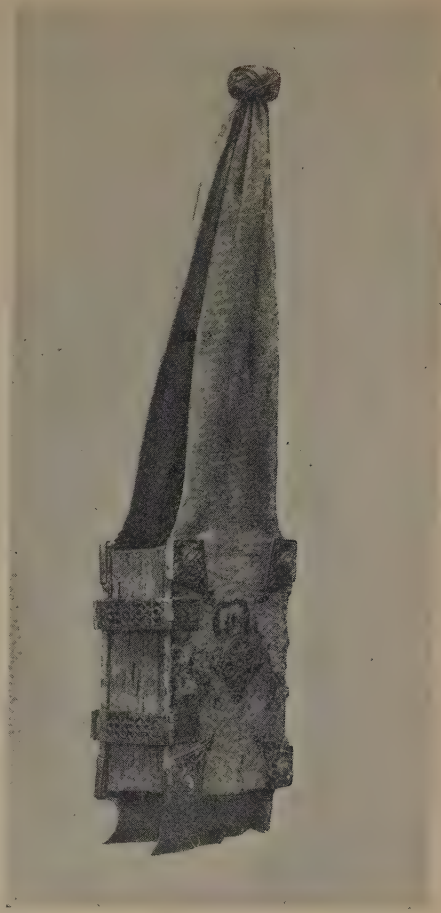
An interesting item in letterpress printing in gold inks may be seen in Messrs. Lorilleux & Bolton's specimen, where gold is printed on *black* paper. There are many purposes, one would think, for which such a combination could be used to advantage; the result is rich and yet refined, and suits certain designs exceedingly well.

These specimens show us how present-day printing depends as much on the ink-maker as on the pressman, or on the blockmaker and on the engineer who constructs the press, and it is hoped that this chapter will help readers to appreciate the highly-refined, complex, and exacting work of these men.



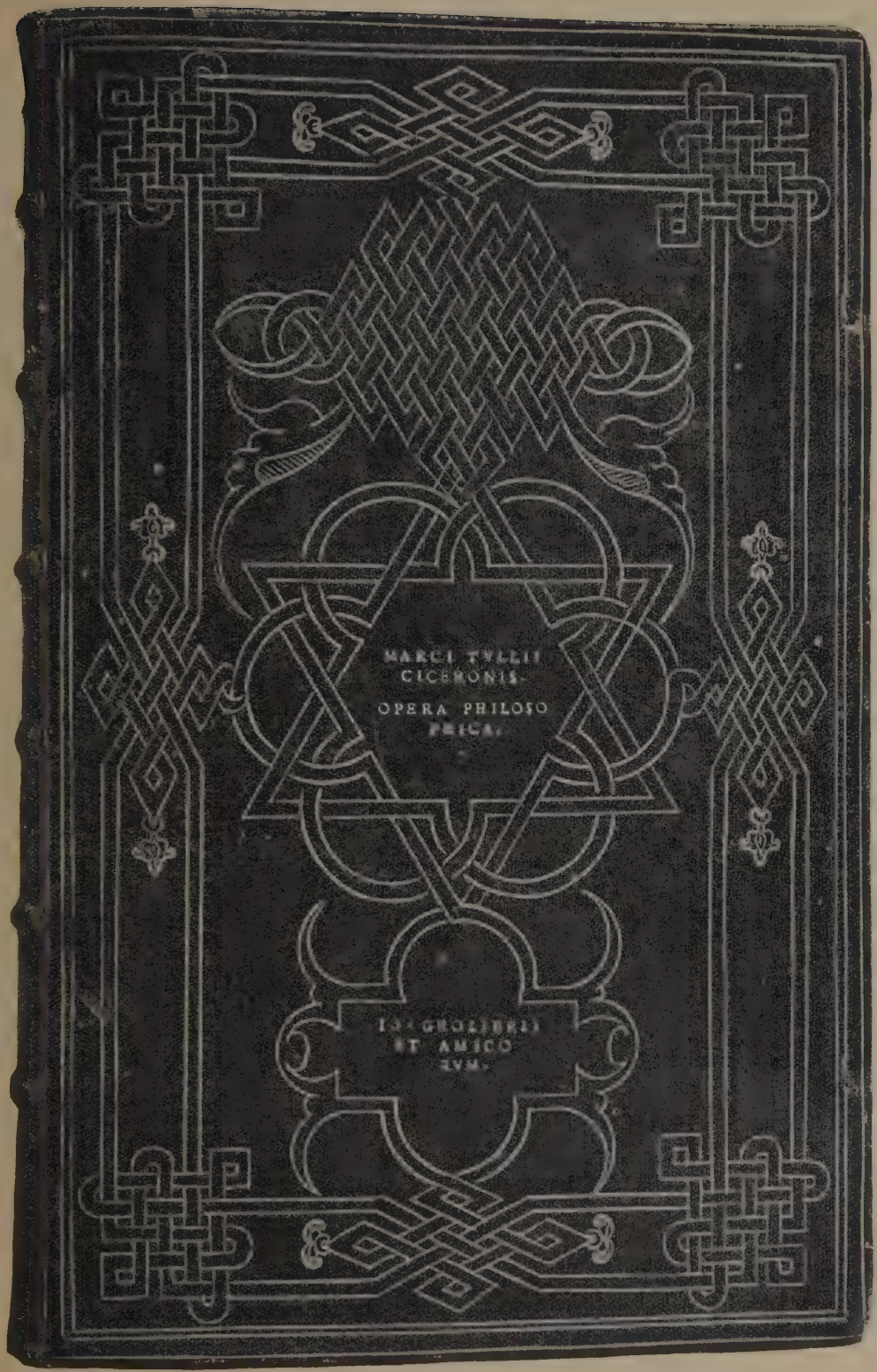
Horn Book, a primitive schoolbook. XVIIth century. By courtesy of Messrs. Quaritch, London.

Bookplate, coloured woodcut, of Hilprand Brandenburg, Carthusian monastery at Buxheim, 1490.



Mediaeval bookbinding

Xth century binding of the "Codex Aureus", golden codex, with relief plates wrought in gold, 59 malachites, 21 sapphires and 108 pearls.
State Library of Bavaria.



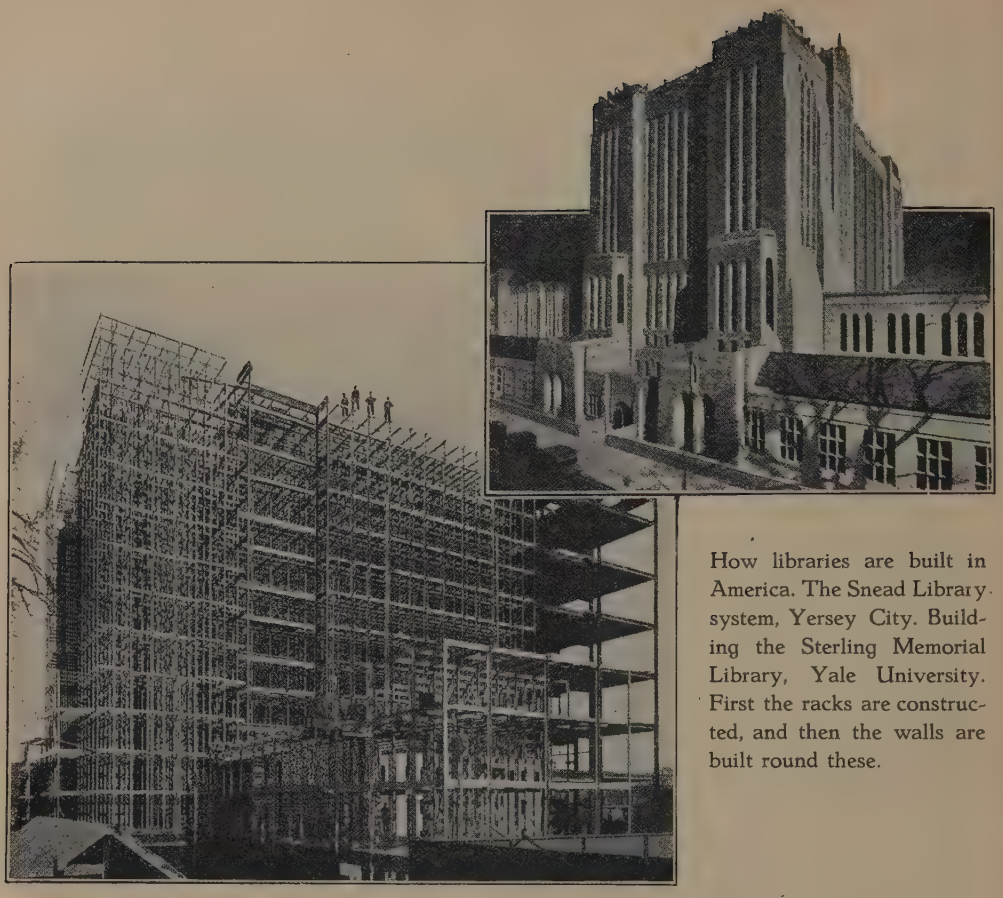
A Grolier binding. Cicero, Opera omnia, Venice 1534-37.
By courtesy of Messrs. Bernard Quaritch, London.

Irish binding, XVIIth century. By courtesy of Messrs. Quaritch, London.

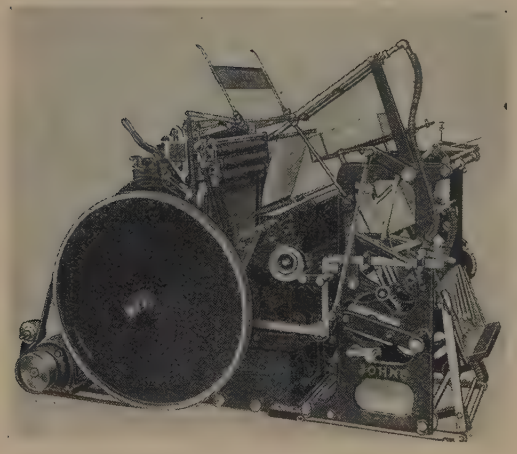
Binding by Charles Mearne, son of Samuel Mearne. XVIIth century.
By courtesy of Messrs. Bernard Quaritch, London.

Biblioteca Malatestiana, Cesena, Italy.
By courtesy of Ulrico Hoepli, Milan.

Biblioteca Classense, Ravenna, Italy.
By courtesy of Ulrico Hoepli, Milan.



How libraries are built in America. The Snead Library system, Yersey City. Building the Sterling Memorial Library, Yale University. First the racks are constructed, and then the walls are built round these.



Auto-Monopol Platen Machine with automatic Feeder. Output 3100 per hour.

CHAPTER XI

BOOKPLATES, BOOKBINDINGS, AND LIBRARIES

To the single book the binding is what the library means to many. Both keep the contents together in proper order, and act as a shield against damage; the owner's esteem for a valuable possession being equally expressed by them. And to a similar interest the printer's device and the buyer's bookplate bear witness. Producer and consumer like to have their name connected with the artistic and spiritual values embodied in the book.

The old printers did not add their names to the printed text which came from their presses, just as the early masters of pictorial art did not sign their names to the works which left their studios. In the 16th century the printer's "imprint" becomes quite common, in the 17th the binders give their names to the works of decorative art their able hands produce; yet the style of a printer or bookbinder is often to be recognized even when there is no monogram or other indication. The oldest device known is composed of two armorial shields; it is Fust and Schoeffer's in the Psalter of 1457 (illus. 31).

Emblems have often taken the form of a play on the printer's name. The Elsevier family devided theirs into "elze" and "vier", the first meaning *alder* and the second *fire*, and they represented this by a branch on fire, if they did not employ the symbolic fruit tree of French origin shown in ill. 58.

Many early printers' marks have a cross, a double or threefold one (Jenson's, ill. 92) which may have been derived from the Christian cross. Often the extreme points of the left and the top are connected by a sloping line and thus a 4-like design appears. Quite a complicated symbolism marks the device of Mathias of Goes in Zealand who was the first printer in Antwerp (ill. 88). It represents a vessel which carries the standards of the Holy Roman Empire and of Antwerp in the mast. The printer's monogram is on the flag flying from the stern; on board we have the coat of arms of Utrecht, the cross of Burgundy and the archduchy of Austria; behind these are the blazons of the families Van Ursel and Van Ranst and that of the town Goes; while on the prow the armorial device of Holland, Haarlem and Zealand stand. "If we translate all this into words", writes Professor M. Sabbe in *"Le symbolisme des marques typographiques"* (Antwerp, 1932) "the meaning is that Antwerp, a town in the Netherlands, then forming part of the Holy Roman Empire, where Lancelot of Ursel was local "ambtman" or sheriff, and John of Ranst margrave, Matthew of Goes was working as a printer under the reign of Philip, duke of Burgundy who governed the Nether-

lands as a feudal vassal to his father, Maximilian of Austria, whose uncle David of Burgundy was Bishop of Utrecht." We have no time for such algebra nowadays.

Plantin, the Antwerp printer, chose "The Golden Compass" as his device, one of its legs being fixed, the other free to function, thus to symbolize his phrase "*Constantia et Labora*". When Goltzius engraved his portrait, here reproduced in our last Chapter, he could not refrain from plaiting the letters of this phrase into an ornament—another example, typical of the "puzzling" interest of the 16th century.

Often the owner's bookplates are treated symbolically in this same manner, pasted into the book like bookbinders' labels. If the owner's monogram or coat of arms is placed on the binding and forms part of the decoration it is given the name of "*supra libros*". A famous collector's name may be seen on some valuable bindings: "*Jo.(hannes) Grolierii et amicorum*", John Grolier and his friends, was the phrase this lover of books had added to the design. One of the earliest collector's marks is reproduced on Plate XXV.

Our bookbindings developed their present shape in the 5th century, when parchment was used more generally instead of papyrus (rolls). These pieces of animal skin were cut square and folded to make flat books, "codices". Such a codex would generally be bound in strong parchment or might be given wooden boards, often decorated with ivory carvings. Thus service books were adorned with silver, gold, ivory, marble, enamel, filigree, and seem more suitable to the court of a heathen Caesar than in keeping with the words of the man of Nazareth.

A marvel of richness and skill from the days of Charlemagne is reproduced on Plate XXVI, a binding from the school of Rheims, containing a manuscript of A.D. 870. Reliefs in hammered gold, 59 malachites, 21 sapphires, and 108 pearls adorn this one bookbinding, and convey some idea of the immense wealth in art and precious stones which a church in those days must have contained. A no less renowned binding is that formerly owned by Lord Ashburnham, and bought by Pierpont Morgan for over £ 10.000. Many museums, libraries and churches are proud to possess bindings of equal interest, value, and beauty. "The Church", said St. Bernhard, "is brilliant with beautiful things, and its poor are in need of everything; its stones are clad with gold, and its children go naked".

In the course of time this wealth increased even. Metal borders protected the heavy wooden boards of the immense books, heavy since they were composed of large sheets of strong parchment. Such bindings were made by the monks in the monasteries, and in their simpler form showed leather fronts, decorated by rectangular or pomegranate designs, pressed in relief. These "monastery" bindings are called "blind tooled", no gold, silver or colouring matter being added to these ornaments.

Ill. 88. Printer's device of Mathias of Goes, first printer at Antwerp, 15th century.

Ill. 88a. Device of Thierry Martens, Alost, 15th century.

Since printing came on the scene the binder's first job was to flatten the sheets by hammering: the folds had to be flattened and since unsized paper was often printed upon, the binder would size it. This would cause the paper to cockle. On our title page this flattening is shown. "There is no end to book-making", says the inscription on this old woodcut, and it sounds like a sigh! The Germans called it *"planieren"* (see the verses in illustration 42).

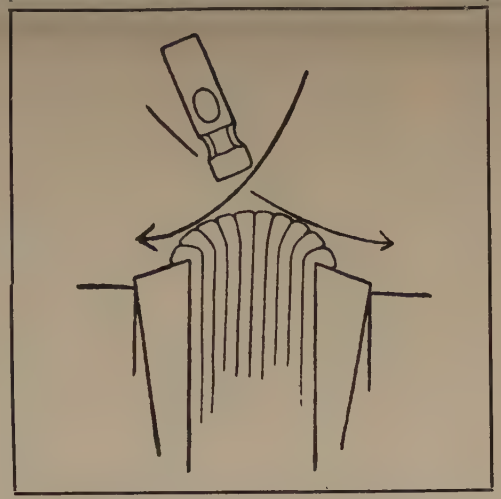
The folded sheets were now sewn together (ill. 91), the thread being carried round vertical cords, which would show in ribs on the outside when the book was bound. For further strength also a "headband" was sewn on to the ends of the folded sheets, as may be seen on the books which Erasmus has lying about him on Dürer's engraving (Pl. IV), where also strong clasps hold the heavy folios together. Nowadays these headbands have but a decorative function, our books being so less heavy. This characteristic made very strong cords necessary; sometimes leather strips or animal sinews even were used; the French still call these cords *"nerfs"*. Often parchment manuscripts were cut to pieces so as to provide bands for sewing books on!

Before sewing the book is gathered and collated to make sure that the folded sheets of each copy are placed in their proper order. Present-day sewing is nearly always done with the aid of machinery, and instead of being ribs on the back the cords are sunk in saw cuts made across the back of the book. Leather is only used for high-class bindings, buckram and linen being taken for ordinary work, or boards and linen backs. Paper boards and paper wrappers will do in many cases even.

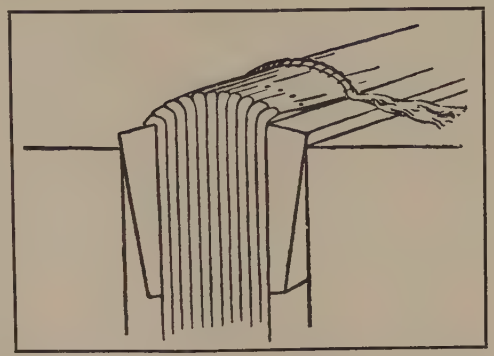
When books began to be taken about more, smaller formats and less heavy bindings were essential, and wood was replaced by card-board. This was first made by glueing sheets of paper under pressure, and since paper was scarce and expensive, damaged proofs, etc., were often used. It is for this reason that several old prints and printed text pages are to be found in old bindings. Pilgrims would also paste holy prints into books they carried with them, at any rate the famous St. Christopher reproduced on Plate XXXIII was found in a bookbinding by the expert Heinecken.

Nowadays all this is done mechanically. But present-day procedure is not intended to make bindings which last for ages. Mr. Douglas Cockerell in his handbook on *"Bookbinding"* quotes a special report on the decay of books, which says that many 15th and 16th century bindings have lasted very well, but that after 1830 and especially after 1860 "nearly all leathers" get worse on account of the chemicals employed in tanning and colouring the leather. Sometimes inlaid coloured leather gives rich effects reminding us of Persian carpets (Pl. XXVIII) but this is now seldom done. Instead of the handiwork executed with the aid of small tools, "fillets", which gradually built up the decoration, most contemporary

FREE PUBLIC LIBRARY WESTFIELD, N.



Ill. 89. Rounding and backing with the hammer. Illustrations 89, 90, and 91 from "Bookbinding and the care of Books" by Douglas Cockerell, by permission of Sir Isaac Pitman & Sons, Ltd., London.



Ill. 90. The ends of the cords are frayed out. The cords keep the sections together, the ends connect them with the boards.

Ill. 91. Sewing the sections on to the cords, equally tightened in perpendicular position in the sewing frame.

bindings will be stamped by a metal block. This may be either an electro from a woodcut block, or a photomechanical reproduction of a design made on paper. Both tools and blocks are heated before use. In the old days "pallets" were also employed, which have a stamping surface shaped like a segment of a roll, fillets being flat stamps. Sheepskin, calf, deerskin, pigskin, sealskin, morocco and Niger morocco (goatskin) from Africa are decorated in this way. Also velvet, silver and gold (filigree) have come into general favour. An interesting velvet binding is shown on Pl. XXV; the material projects over the book and serves as a wrapper or handle if the book is carried about, as old paintings show. The most primitive way of keeping printed sheets is the "horn-book", shown on the same Plate. It consists of a single sheet, printed with the alphabet and the Lord's Prayer as used in schools with a handle and a horn cover.

Mediæval libraries were the birthplace of most European universities, and thus the library and its aspect remained reminiscent of the chapel and the church when scholars and princes began to form libraries. A mediæval interior still may be seen in some old towns, such as Zutphen in Holland (see Appendix) where the books are kept lying on desks (not in book-cases) and are fastened to these with chains, narrow seats running alongside the lecterns. Hereford Cathedral also can show the visitor such mediæval studies with chained books; and Florence possesses a similarly famous library in the "Laurenziana", with the staircase designed by Michel Angelo. How the interior of libraries, now such democratic institutions, developed from ecclesiastical into princely style, and thence acquired up-to-date architecture, is shown on Plates XXX, XXXI, and XXXII, the latter permitting us to glance at a really American method of library construction—steel racks carry not only the books, but the whole building as well.

Similarly a revolution took place in the bookbinding technique.

In the old days you began by having a book, and the binder would "build" the binding round it to your personal taste, wanting some weeks at least for a good job. Nowadays folding the sheets is done by machinery at the rate of four to five thousand sheets per hour. A rule and a knife are no longer employed for trimming: a machine will cut to size some 800 books per hour. The bindings are prepared even before the books arrive from the printer's to be pasted in ("cased") as soon as they arrive at a rate of a dozen per minute (Plate XXIII).

Let us now glance at the periods in the art of binding since printing came on the scene. One of the first men who had printed books bound for him in the most beautiful fashion is Jean Grolier, Vicomte d'Agnisy, paymaster to the troops which the King of France sent to Italy in order to support his claim on Milan. By having books bound for him so beautifully Grolier became immortal, he was a scholar in touch with Erasmus and Manuzio of Venice. Very little is known about the man; whether

BINDING BY MAGNUS, DUTCH, XVII TH CENTURY. RED MOROCCO,
FERS POINTILLÉS
BY COURTESY OF THE UNIVERSITY LIBRARY, AMSTERDAM

PRINTED BY VAN AELST BROS.
MAASTRICHT, HOLLAND

PRINTED ON BALTIMORE-ART-PAPER, LUTKIE & SMIT, AMSTERDAM

he himself designed some of the bindings which are now so famous is uncertain. Many of them show Arabian *motifs*, lacework, ribbons pleated to form ornaments and knots. If we bear in mind that many Orientals lived in Venice or came in vessels which kept up a lively trade all over the Mediterranean, with Asia Minor and Persia, this is easily understood (Pl. XXVII). Grolier returned to France in 1529 and may have brought Italian craftsmen with him, for at once the art begins to flourish there. Innumerable magnificent bindings are produced since, Lyons becoming a centre of this activity. From 1560 onward the prominence of French binding is recognized all over Europe. One of the first French craftsmen is Etienne Roffet, in whose work the ribbons, just referred to, may be seen also. He bound books for Francis I, the patron of Tory and Estienne, and may have worked for Grolier also who later had a similar post at the exchequer in Paris to that which he had held in Italy.

In that country the Medici, interested in art in all its forms, were among the first to form libraries, Thomas Maioli being the name of a contemporary bookbinder or collector, keen on fine bindings: an Italian Grolier.

A German artist equalling Roffet and the others mentioned is Jacob Krause, binder to the King of Saxony, one of whose rich designs may be seen in our Appendix plates. But in France the passion for fine books was greater than anywhere. Jacques Auguste de Thou, whose father was a friend of Grolier's, possessed no less than 8000 books and 1000 manuscripts—each a veritable treasure, and finely bound. In the 17th century Le Gascon created the *pointillé* style, gracefully stippling the surface of his boards. His style was followed by the Amsterdam binder Magnus, who worked for the Elseviers; one of his bindings is reproduced on an inset plate. Nicolas Eve is credited with the designs called *semis* —a small fillet repeated many times, like seeds sown on a field—and *fanfare*, the latter being composed of palm and laurel ornaments, intermingled with spirals and flowers. Ribbons now assume circular forms.

Eighteenth century France invents many other designs, such as the *dentelle*, in which the tools repeat small, fine ornaments to resemble lace. The binders now begin to sign their works, and families continue family traditions. Thus we have the Padeloup, and the Derome family with no less than eighteen binders. A fine specimen by A. M. Derome, binder to the King from 1685—1758 may be seen in our Appendix. Late in the 19th century the "cathedral" style appears when gothic principles were revived in architecture, it follows after Napoleon's *Empire* style.

English bookbinding of the 17th century has produced works of great beauty also, velvet, silk and embroidery being the fashion.

> "The Kings and Queens of England were great admirers of fine bindings. James I. possessed a large number of superbly bound books,

> resplendent with gold tooling, the sides being richly studded with heraldic thistles, fleurs-de-lys, etc. During the troubled reign of Charles I. comparatively few books were added to the royal collection, but his son Charles II. increased it very considerably. His books are generally plainly but handsomely bound. Samuel Mearne was his bookbinder",

says a catalogue of an exhibition of fine old bindings in the British Museum.

Valuable libraries were set up by such connoisseurs as the physician Sloane, or by Harley, Earl of Oxford, whose collection was one of the most famous in the world. The "Harleyan" style of binding has a square panel formed by a rectangular border. The "cottage" style was created by Samuel Mearne, binder to the King. The design to which this name was given shows a panel shaped like the roof of a cottage. Our reproduction shows how Charles II had the Book of Common Prayer bound by him in 1669. Mearne's son Charles was also a master of his craft (Plate XXIX).

In the 18th century nobody compares with Roger Payne, who designed his own fillets, and engraved his own tools, who prepared the colours of his leather himself likewise. He was fond of the grain of his morocco ("straight grained" morocco), which he gave delightful and delicate colours.

The Morris movement brought new life to the art. Morris himself and Cobden Sanderson designed the Kelmscott Press bindings; the Doves Bindery under Cobden Sanderson produced the best ones of the period. Some were closely copied from Gothic examples. Douglas Cockerell continues Cobden Sanderson's work; good craftmanship and refined taste alike characterize his bindings.

In the 19th century Lord Spencer's library with some 40.000 books in the care of Dibdin, and the Duke of Roxburghe's collection, sold by auction in 1812 possessed valuable works:—a Boccaccio of 1471 alone fetched no less than £ 2260—follow the glorious example set by Bodley. Lord Spencer's library was bought by the widow of John Rylands, a Manchester industrialist, in 1892, and to this the Earl of Crawford's collection was also added, thus making the John Rylands Library one of the finest in Europe. In 1799 a remarkable library, containing many bindings by Roger Payne, was bequeathed to the British Museum by the Rev. C. M. Cracherode. The Museum unites several other important collections, of which we need only note those of Sir Hans Sloane (1753), the Old Royal Library (1757) presented by George II, the works on natural history in the library of Sir Joseph Banks (1820), the library of George III (1823), the Grenville collection (1847), and the Huth collection (1911).

Cardinal Mazarin and the Kings of France laid the foundations for a similarly enormous library, the *Bibliothèque Nationale* of Paris. In both

Binding by Charles Mearne; made for Charles II. in 1669
By courtesy of the British Museum

Doubletone Sepia
Letterpress Ink by
Lorilleux & Bolton Ltd.

institutions hundreds of scholars, scientists, and historians work from morning till night.

But America shows no less interest in the domain of the book. The universities and the public libraries account for books by millions, and the greatest treasures of bygone days were bought by American collectors. Millionaires like Pierpont Morgan, Widener, Huntingdon, Fiske, and Carnegie spent fabulous soms of money on libraries. An entirely new technique, a new training of the staff had to be devised to cope with such almost impossible possibilities. Since Manchester set the example with its public library, America has followed in truly American fashion, the New York Public Library alone lending about ten million books per year! Our only hope for the future can be that this accumulation will not go on at this rate. Yet the growth of libraries such as that of the British Museum or the *Bibliothèque Nationale,* where a copy goes of each book printed in the country, means an afflux of ephemeral books, the majority being never asked for. It seems, therefore, an obsolete rule which ordains the piling up of everything that is being printed, a rule which certainly had sense in the days of Grolier, Bodley or Mazarin, but which has lost its *raison d'être* in our own time, the cost of keeping never-read books clean alone being almost fantastic.

CHAPTER XII

THE ARTIST AS ILLUSTRATOR: TECHNICAL PROCESSES

THE WOODCUT. In the foregoing pages we have seen that the earliest printed books were illustrated with woodcuts which imitated the illuminated manuscripts, and that, in the 17th century, engraving on metal and wood came to be employed instead.

From a technical point of view the woodcut is an ideal method for the illustration of books, because it is a relief print from the wood-block, which can be used with the type and printed with it in a single "working", the type also having the printing surface or "face" raised and the whites sunk in each metal letter. For this reason it is often said that the woodcut is the only true way to illustrate a book. Technically this is so, but aesthetically there is more to be said on this matter. We shall return to this subject in our chapter on the Principles of Illustration, contenting ourselves here with a review of the technical side of the woodcut and other hand-made prints.

Since the first books—the old Dutch ones, Gutenberg's, Caxton's, and other pioneer works—were printed in a very large type and "black" Gothic letter, a thick line suited the illustrations best. A page of a block-book as shown in Chapter II possesses a perfect harmony in visual weight of line between the drawing and the text cut in the same piece of wood. The wood used in those days was cut along the grain, and the fibrous nature of the material influenced the nature of the lines cut into it. Gradually the designs, cut by a "Formschneider", a forme-cutter, were made richer in detail by such artists as Dürer, whose abilities as draughtsmen led them to draw larger and more elaborate compositions than those of their anonymous forbears, who simply cut plain outlines to be completed by hand-colouring. The skill of the cutters had to keep pace with the increasing elaborateness of the designs given to them. This oldest of illustrative processes is still up-to-date, as numerous artists in all European countries and in America demonstrate. The taste for more refined line-work which had led the woodcut to leave out the hand-colouring and to become a richly shaded print in black and white found its *métier* in the engraving of metal. Ill. 92—95 show how the woodcut, fundamentally a white line cut in a piece of wood, the surface of which was inked for printing, develops into a design of black lines on a white ground when more wood is cut away. On the other hand, ill. 93 and 94 demonstrate how the black surface was enlivened by punching white dots into it, following the practice of the metal-engravers who decorated boxes and similar objects in this way. Thus the "dotted" print came into being, here represented in an ornamental M (ill. 94). The style was

Ill. 92. Printer's device of John Herbort, John of Cologne, and Nicholas Jenson, 1481, showing the fundamental characteristics of wood-cutting: the cuts produce a white line on a black ground.

Ill. 93. Etched ornament on a metal box, showing the origin of the "dotted print".

Ill. 94. Letter ornamented after the style of the dotted prints, showing the design in white on black ground ornamented with white dots

Ill. 95. Printer's device of Thielman Kerver, Paris, 1498, showing how a design in black appears by reversing the method, part of the background still remaining black.

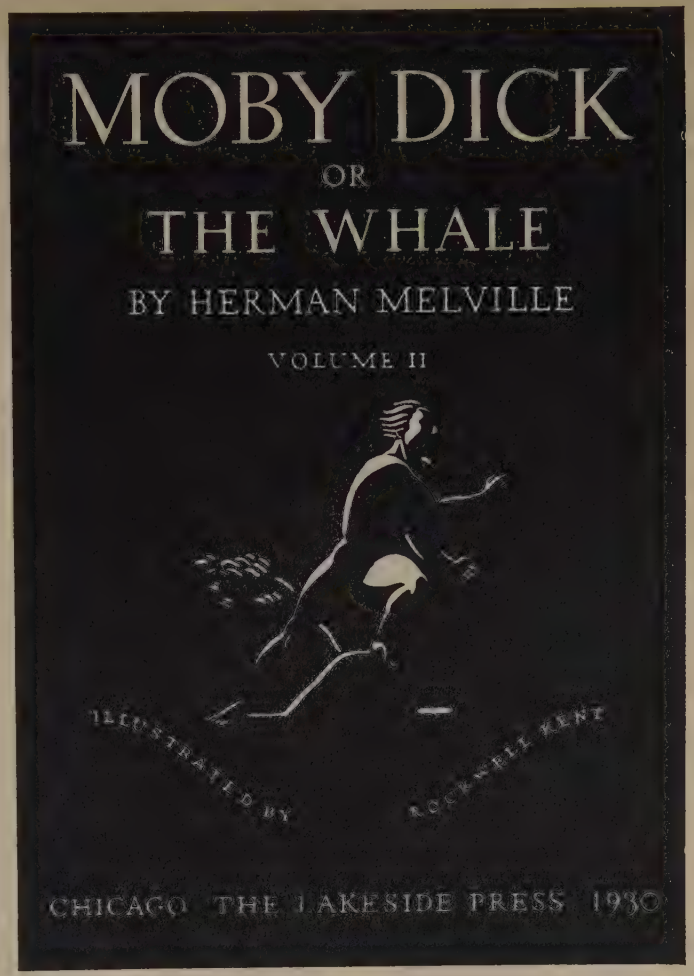
particularly favoured by the early French engraver, Oronce Finé (see also Plate X).

The object of the old wood-cutters was to copy a line-drawing. They employed the knife and the gouge to cut away the whites. During the 17th and 18th centuries tonal values became popular, and were given free play by the metal-engravers. About the year 1800 it occurred to one of these men to use the graver on hard wood instead of on his copperplate. This innovator was Thomas Bewick, born in Cherryburn, near Newcastle, in 1753. He employed box-wood for the new method, and, to ensure a fine and non-fibrous surface, cut it across the grain, i.e., not as a plank vertically, but as a slice horizontally. In this way Bewick started from a surface which prints black, and he made this show in his prints, which is the essence of true wood-cutting. Unfortunately he lacked the artistic qualities necessary to put this technically sound theory into a practice of real importance. Let us quote his own words:

"....the plain surface of the wood will print as black as ink and balls can make it, without any farther labour at all; and it may easily be seen that the thinnest strokes cut upon the plain surface will throw some light on the subject or design; and if these strokes again are made still wider or of equal thickness to the black lines, the colour these produce will be a gray; and the more the white strokes are thickened, the nearer will they in their varied shadings approach to white; and if taken away, then a perfect white is obtained."

This principle of engraving on wood instead of cutting it is right, but as it was used to produce, or rather, to imitate tones by a number of very thin lines, Bewick's method was soon regarded as suitable for copying oil-paintings, wash-drawings, water-colours, and the like. These, being composed of tonal values, would reproduce much better in the new method than in the old outline woodcut. This meant that the wood-engraving lost all character of its own, and aimed at perfect imitation of a layer of oil pigment if the original were an oil-painting, or of transparency if it happened to be a water-colour. Even pencil- and crayon-drawings were copied so exactly as to be mistaken for the original. And when photography arrived on the scene, the smooth tones of the photographic print were rendered by the use of all kind of "multiple" tools, which drew a dozen or more lines at once. In this way wood-engraving became more and more mechanical, and Doré's drawings, photographic portraits, etc., were reproduced in one and the same way for books or for such magazines as the "*Illustrated London News*". In England the Brothers Dalziel supplied innumerable illustrations; in America Timothy Cole became a virtuoso of reproduction. When a method was found to print photographic negatives direct on wood another step towards purely mechanical reproduction was taken. Bewick, at the beginning of the century, would not have expected that his new invention and style, the

Ill. 96. Woodcut by Jan Poortenaar, self size. Printed from the woodblock.



Ill. 97. Title page by Rockwell Kent (reduced). By courtesy of The Lakeside Press, R. R. Donnelly & Sons, Chicago.

Ill. 96a. Woodcut by Jan Poortenaar, printed from an electro.

engraving, would lead to such utterly inartistic plates—inartistic because they lacked expression despite their technical perfection.

For colour-work on wood nothing can equal the Japanese prints. Nine out of ten European woodcuts are dull imitations of them, whatever the skill with which they are executed. Pissarro's illustrations for Jonson's "*Songs*" are one of the rare cases where reputable colour-prints have been designed for books. Too rarely is really original work done in this medium. Apart from *editions-de-luxe* coloured by hand, we must turn to Belgium and France to find truly artistic illustrations executed in colour-woodcut. Recently the Antwerp publishers "De Sikkel" have published a book, "*The Heroic Voyage of the Alexis*", for which Mark Severin cut excellent prints in black, blue, and warm grey. We are happy to show to what decorative ends the plain colours are set together: four of the charming plates being inset in this volume. Also Messrs. Malherbe, the Paris printers, collaborating with a similarly brilliant artist, M. Jean Droit, produced a fine specimen which shows in another treatment the rich possibilities of this technique. "*La Jeune Tarantine*", the famous poem by André Chenier, was chosen to demonstrate what can be done with a careful lay-out, delicate colouring, fine designing, and good printing.

Brilliant and vivid colouring is obtained by water-inks printed from rubber mounted on metal plates. The rubber is cut by professional cutters from a design supplied by the artist. The "Paramat" prints stand foremost in this line, the transparent colours allowing a great variety of colouring in comparatively few printings by "overlapping" without risk of a heavy appearance. The Jean Berté water-inks have led to matt oil-inks being used, the latter lacking the transparency of the former and producing something of a pastel effect.

Wood-blocks of box-wood will stand large editions without noticeable wear. Recently the writer had some 30,000 copies printed of such blocks, and the last showed no deterioration from the first. The wood-block shown in illustration 96 is one of these. The woodcut is an excellent medium, since you have the artist's own handiwork direct. The chance of a block cracking can be avoided by having an electro made. This, being a metal replica of the wood itself (and not, as with a zinco, a photographic reproduction of a *print*) produces exactly the same prints as the wood-block.

ETCHING AND ENGRAVING. We have said that fundamentally a line cut in wood is a white line when printed. If we desire to print a black line from wood we must cut away the whites which surround it. We cannot very well cut a line into wood and print it as a black line, because in that case we must fill the groove we have engraved with ink, and press the paper into it so as to absorb this ink. To do this so much pressure must be applied that the wood will almost certainly crack.

Moreover we cannot clean the surface so thoroughly that it will print a pure white. For work of this kind metal is therefore necessary; and such intaglio work is executed in copper or zinc.

All intaglio prints have a greater range of tone-variety, as a line will contain more ink when it is deeper than when shallow, and will print lighter or darker in proportion to the quantity of ink it contains. Such lines may be executed simply by cutting them into the metal with a tool, called a graver or burin, and in this case the print is an engraving. But also the metal may be varnished and lines may be drawn in this "ground" with a needle, laying bare the metal surface, wherein grooves are then made by the action of corrosive fluids. In this case the process and the print are termed "etching" (from the old Dutch word "*etsen*" meaning "to bite away"). Both methods are extremely old and were employed by the armourers of ancient Europe and Asia; but it was the Renaissance again which saw the invention of the printing of such bitten or engraved lines on paper. Hitherto they had been used as ornamental lines on weapons, helmets, and the like, and filled up with a black substance to show off the design to greater advantage.

Etching and engraving were illustration processes highly favoured in the 17th and 18th centuries. Rembrandt did several etchings which were to decorate books. One is reproduced here as a specimen of this form of book-illustration and, at the same time, of reproduction by the collotype process, with which we deal in the next chapter. Engraving is a favourite process with some contemporary French publishers, and we may mention the prints of Laboureur in this medium. But in the 18th century the bare line was not *en vogue*, and many tone processes were invented.

"Aquatint" is the name given to one, which was invented to reproduce wash-drawings in sepia or Indian ink. We have just said that etching is effected by line drawing on a plate coated with varnish and subsequently bitten away by acid. For aquatint the varnish is a finely powdered resin which leaves a porous ground. It adheres to the metal by heating, and thus enables the artist to have a similarly fine "grain" bitten into the metal. As a rule the dots are so small that they are not seen separately, but are only discernible by means of a magnifying glass. The eye sees them merely as tone.

Another method was invented to imitate crayon-drawings. In this instance the varnish was kept soft by mixing it with grease. If the varnished plate be covered with a sheet of paper on which a drawing is made, the paper will adhere to the varnish, and, when taken off the plate, will leave the ground porous in those parts where the pencil has done its work. This process, "Soft Ground", was much used for book-illustration by the Belgian artist Félicien Rops (1833—98). Aquatint was a method beloved in France, where Debucourt (1755—1832) excelled

in the semi-classical style of the period. One of his illustrations is shown on Plate XXXIX; the reproduction opposite is a line engraving, where the tones are composed of innumerable lines. The French often printed such work in colour.

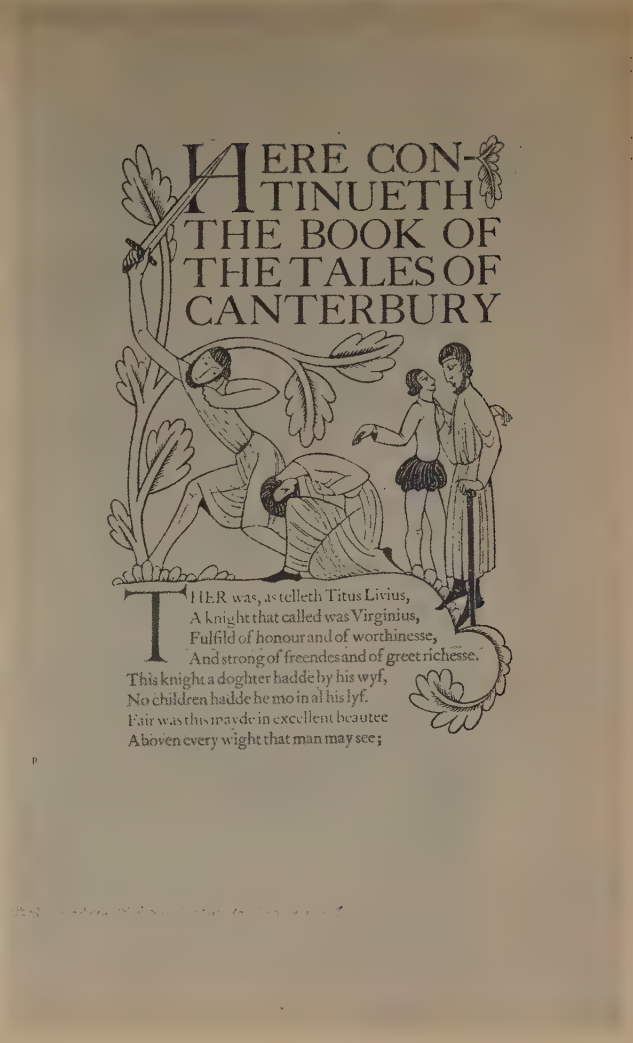
This was also the case in England, where two other processes enjoyed general favour—the "stipple" and "mezzotint". In stippling lines are entirely superseded by tones made of fine dots—a method suitable for reproduction of oil-paintings for this reason. Stipple-engravings are also printed in colours. The Italian Bartolozzi, who came to England, was a master in making sentimental prints in this manner. Prints by his followers, Ryland and Caroline Watson, were also greatly in vogue during the second half of the 18th century. A few people still seem to be mentally marooned in these bygone times.

Mezzotint is a less mechanical process, and therefore an artist can still use it with good results. It is an engraving technique. The plate is roughened all over so that it would yield a plain black surface if it were printed, as the slightest roughness retains printer's ink. By scraping off more or less of this unevenness, the mezzotinter can obtain any grade of half-tints (mezzo-tints) desired. He is, it will be realized, continuously working from black to white, whereas an ordinary engraving or an etching is achieved by working from white towards black. Reproductions after oil-paintings were sometimes very successful in this mezzotint process. More or less akin to it is dry-point work, where each line is scratched into the smooth surface of the copper with a needle, producing "burr", i.e., roughness for printing. In this technique, however, lines and not tones are employed.

All engraving and etching processes have this in common: that they have to be printed separately from the letterpress on a press of different construction, as they all must have the paper pressed into the furrows or other declivities of the plate—the opposite from the impression of type or wood-blocks. The press used is one consisting of two heavy rollers. Between these the inked plate, damped and therefore elastic paper, and thick felts are passed. The felt being strongly compressed will push the paper into the grooves of the metal plate, which has been inked by means of a dabber or ball charged with ink and dabbed all over the plate. The surface of the metal is then cleaned by wiping, so that the ink will be retained by any furrow or roughness. The inking of a plate and the etcher at his press are shown on Plate XXXIV.

Engravings have been used for maps and atlases since 1478, when Sweinheim used them in a "*Ptolemeus*". The reason is that maps contain a great deal of lettering, the lines of which can be cut direct if they are executed in engraving. But if they were to be cut in wood (this being a relief-process) the whites would have had to be cut away, which would entail excessive labour. We have here the same incentive as that which

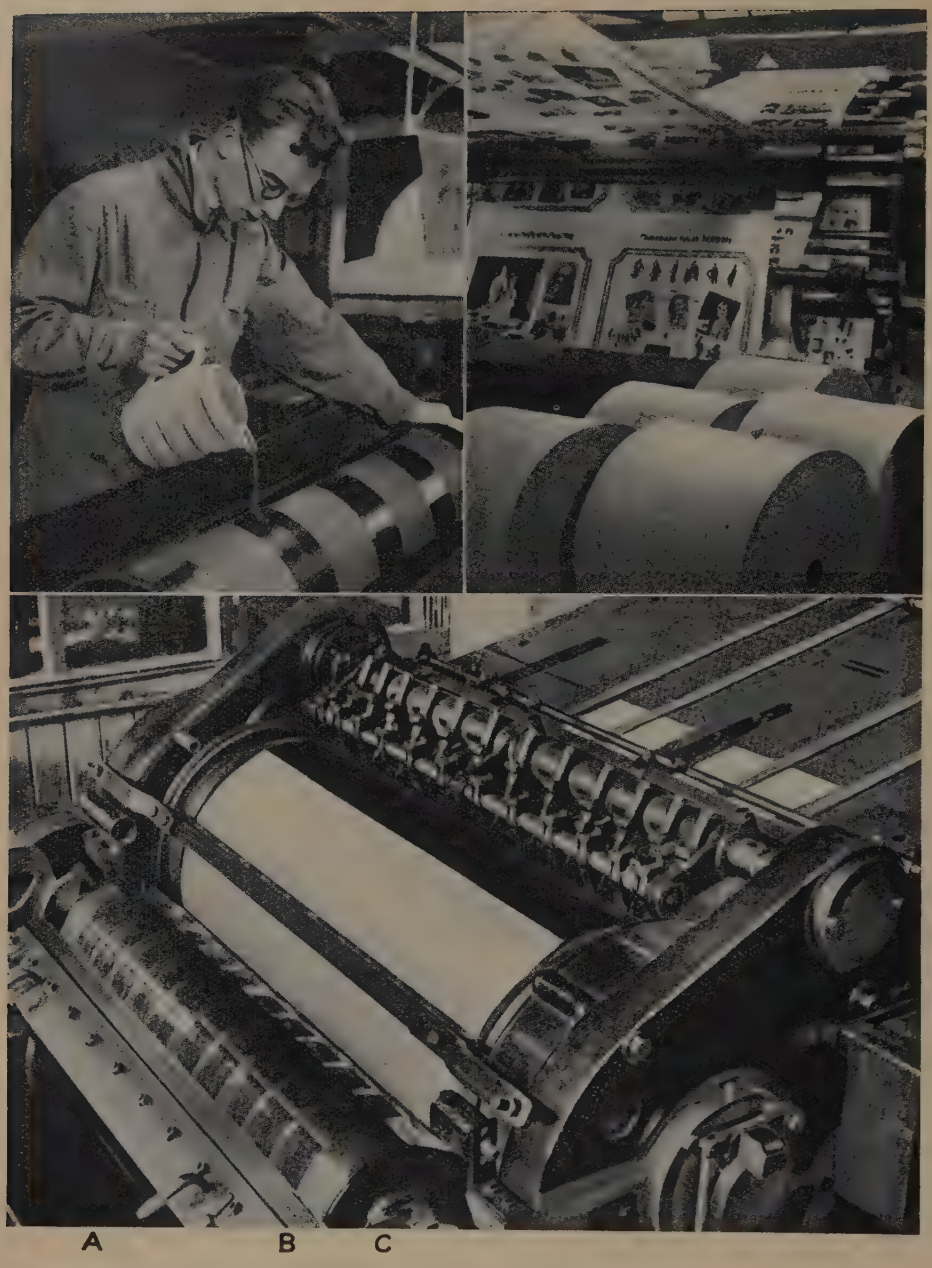
"St. Christopher", 1423. The earliest dated European woodcut (German). By courtesy of the John Rylands Library, Manchester.


HERE CONTINUETH THE BOOK OF THE TALES OF CANTERBURY
THER was, as telleth Titus Livius,
A knight that called was Virginius,
Fulfild of honour and of worthinesse,
And strong of freendes and of greet richesse.
This knight a doghter hadde by his wyf,
No children hadde he mo in al his lyf.
Fair was this mayde in excellent beautee
Aboven every wight that man may see;

A page from Chaucer's "Canterbury Tales". Woodcut by Eric Gill, 1926. By courtesy of The Golden Cockerell Press, London.

The printing of an etching Top: the plate is laid on a heater and inked by means of a dabber. Bottom: the print is lifted from the plate.

A camera for photographic reproduction.



Photogravure. Top, left: the cylinder is being etched. Top, right: the printing on reels of paper (web-fed machine). Bottom: the sheet-fed machine, showing the printing roller (C), the „doctor" blade (B) which takes off the superfluous ink, and the inking trough (A).

led to the invention of metal type to take the place of the cutting of wood in the block-books, which necessarily limited the possibilities of printing to text of comparatively few words. A man who set out to cut in wood one page of the text of this book, having to engrave all the whites between the printed parts of the letters, would take a lifetime to reach the last line.

LITHOGRAPHY. The general decline in taste and in artistic standards during the 19th century, which had already commenced in the latter half of the 18th, offered poor soil for the seed of a new technique. The possibilities of this new form of pictorial art, discovered in 1796 by the German, Senefelder, were not all realized by the inventor. He was the son of an actor, and had written a few small plays, but found it difficult to pay for the printing of them. As he had a slight knowledge of engraving and etching processes, he sought to apply these to the printing of his plays and the musical compositions of a friend. Copper plates, however, were also outside the range of poor Senefelder's purse. It occurred to him that he might use the cheap tiles which were abundant in the neighbourhood, and were generally used for flooring. He trained himself in reversed writing with a special ink prepared to resist the acids employed in etching, and it happened that his mother asked the young man to write a list for the laundry-man who was waiting at the door. He wrote with this ink on one of his stones, tried to etch it, and the new process was there in embryo.

For the printing of his stones he employed a primitive copperplate press with rollers, in which his tiles inevitably and consistently cracked, as such pressure was meant for metal plates only. The next step was a scraper, moved across the surface of the stone. With this device Senefelder could produce 120 copies in a fortnight—an immense success for the author-printer-inventor.

In lithography (or "stone-writing", as the word indicates) the drawing is made on a kind of limestone with ink or chalk containing grease. This grease is absorbed by the stone which is now non-absorbent to water where the line occurs, but, if the stone be wetted, the blank parts will absorb water. Since grease or oil will adhere to grease or oil, but will not mix with water, printer's ink can be laid on the lines of the drawing if an inking roller is passed over the wet surface. For the best results a slight etch is necessary, but the print is a plane-print, since there is neither intaglio nor relief to speak of.

Books in the 19th century were often illustrated with lithographs representing landscapes and views of town of little artistic value. Senefelder himself and his brothers carried the new process abroad, and, apart from its application to the printing of music, it was especially employed by French artists such as Daumier, Gavarni, and, later, Chéret, Toulouse Lautrec, and Steinlen. Colour-work was done in lithography

by the Dutch artist Van Hoytema, who executed a series of children's books which were also published with English text. We reproduce trial proofs of a page with the wording in both languages, and it will be readily seen that the letters drawn by hand harmonize much better with the design than those set from type. The combination of lettering and drawing is always a difficult matter (ill. 17).

The three graphic arts mentioned communicate the artist's own handiwork to us. Lithography may be looked upon as technically the simplest of them, because here he simply has to do the drawing, the preparation of the stone being the same whatever the drawing may be like. The drawing is made first and then, as it were, "fixed", when its lines and values are there. In engraving, in etching, and in woodcutting, however, the laying down of the design into the metal or wood forms part of the picture itself and dictates its tone-values. It also decides the character of the lines: the handling of the tool, be it a graver, gouge, or etching needle and acid, being a personal affair in every instance. Not so in lithography: there is no tool here, though a certain variety may be obtained by the use of crayon and ink for drawing, and of scrapers to lighten up dark portions. The scraper might be compared to the use of india-rubber in drawing on paper. Thus, with a wash of ink as the basis, and scraping as the medium, a great variety of aspect may be obtained.

We have only given a very simple outline here of the three processes which the artist employs to multiply his own drawing. We will, in our next chapter, see what mechanical, photographic processes do to produce prints in the overwhelming quantities demanded every day. Here we can only deal in a general way with both kinds of illustration, as even a short description would fill a volume by itself. A less superficial treatment is given in my book "*The Technique of Prints and Reproduction Processes*". How important it is for the book-lover, the printer, or anyone connected with books to have some knowledge of such process is made clear by an article in "*The Times Literary Supplement*", 14th May, 1931, in which Mr. R. W. Chapman, of the Oxford University Press, points to such a photographic reproduction of Edgar Allan Poe's "*Tamerlan*". Of the original only four copies are known, each having a value of something like 20,000 dollars. The facsimile has an edition of 295 copies, and these are sold at twenty shillings, bearing no indication that they are reproductions of the valuable originals. It will be readily understood that one's own innocence and other people's iniquity find ample opportunity in such instances. The only weapon against fraud or error is knowledge of the processes which imitate other techniques.

So they all came to the farmyard. Such a commotion there was, all about an eel that everybody wanted a bite of. "Look at the fat old duck in the corner," said the mother, "her blood is the bluest of Spain, you must all make a pretty curtsey to her, children."
EN ZOO TRADEN ZE DEN TUIN DER EENDEN BIN NEN. HIER WAS HET EEN HEELE DRUKTE, TWEE FAMILIES VOCHTEN OM EEN PALINGKOP GEBRUIK NU JE BEENEN ZEI DE MOEDER EN GA EENS EEN BUIGING MAKEN VOOR DIE GROOTE EENDDAAR MET DIE ROODE LAP OMZIJN POOT, ZIJ IS DE VOORNAAMSTE VAN ONS ALLEN, EN VAN OUDEN SPAANSCHEN ADEL.

Illustration by Th. van Hoytema
Fairy tale, drawn on stone by the artist. The text drawn by hand harmonizes much better with the drawing than when set from type

Three-colour blocks
by L. Th. Boelaars N.V.,
The Hague-Holland

Published by David Nutt, London

Printed by
Ten Hagen's Printing Works,
The Hague-Holland

CHAPTER XIII

PHOTOGRAPHIC ILLUSTRATIONS: TECHNICAL PROCESSES

Photography, which—thanks to the French inventors Niepce and Daguerre—developed into an established process about 1840, is the basis of all mechanical methods of producing prints. Whereas the hand-processes are—or at least can and should be—vehicles for an artist's emotions and creative power, the task of photographic processes is purely to reproduce. The technique employed here must yield precedence to the technique by which the original came into being. If this original be a photograph, its smooth tones should be rendered as true-to-photograph as possible. If, on the other hand, it is an oil-painting, the peculiar roughness of the surface, the brush marks, should show. In a third case justice must be done to the transparency, or "watery" character of a water-colour drawing, and so on. To this end a photograph is made first, as a negative or translucent image is necessary. This is "copied" on to a metal or a stone surface. Next, the metal or stone is etched to produce printing-plates, either in relief or intaglio.

When in 1860 a method was discovered to print such negatives on wood, the end of the woodcut was in sight; for doing the same on metal, and etching the photographic image was now near at hand, and did away with much labour. John Talbot is credited with having discovered the use of gelatine sensitized to light by chemicals for this purpose. Such gelatine will harden when it is exposed to light, an then will no longer be soluble in water. A metal plate may be coated with a very thin layer of it. A photographic negative copied on such a surface will leave it soluble in some parts, whereas other areas will harden. The first portions may be washed away, and the metal is laid bare on these parts; the hard portions remain and resist the acids next employed to etch the metal. In this way the flat image is made into a copper or zinc relief-plate which may be printed from; such a relief-block will reproduce a pen-and-ink drawing with amazing accuracy. As zinc is generally used in this case, these "blocks" go by the name "zinco's". The hardened gelatine parts act as, and are called, an "acid-resist", because they resist the action of the fluids employed in the etching process. Such line-blocks may be seen in our text; they are mounted on wood type-high, and printed together with the letterpress.

Real tones, varying in value, cannot be produced in the manner described, as the inking roller of the press distributes the ink evenly over the printing surface of type, blocks, and woodcuts alike. Such tones can only be *imitated* by having very small dots in the light and

larger dots in the darker areas of the image. If these dots are sufficiently small, our eye will not see them at a small distance, but will perceive a grey tone. The question remains how we find a relation between the sizes of these dots and the lighter, darker, and quite black values, respectively, of the original; in a photographic portrait, for instance, the white collar, the medium tints of the flesh, the black of the dress, etc.?

The photographer does not make an ordinary photograph in such a case. He puts a glass plate inside his camera, which is divided into minute squares. It compares not badly, perhaps, to a leaded window divided into window-panes. Through each window-pane a certain amount of light falls on the negative; much or strong light will come through those parts corresponding to light areas in the original, and only little or feeble light will fall through such panes as correspond to darker areas. This means that the image created on the negative is divided into larger and smaller units in proportion to the intensity of the light. The "screen", as this glass plate is called, should be divided into squares of exactly the same size, as the slightest difference would influence the proportions. Such a screen is expensive to prepare, costing well over £ 100.

The negative obtained in this way is made into a printing-plate, i.e., a relief similar to a zinco. Because of the half-tones thus imitated, this kind of block is given the name of "half-tone". Our plates are printed from such half-tone blocks, which require to be etched and "stopped out" several times like an artist's etching.

Whether a coarse or a fine screen is employed depends on the paper on which the block will be printed (see page 122).

In some cases it is possible to etch away the dots entirely on those parts where an absolute white is desired. As there are, on an average, 22.500 little dots to the square inch, this is not easy. Pencil-drawings with much white in them may be treated in this manner. Such blocks are called "deep-etched" half-tones.

But a better result is obtained photographically. The photographer with his screen can greatly influence, not only the size, but also the form of his dots by using various "stops", squares, ellipses, etc. He can also admit so much light into his camera after a first exposure that the tiniest dots will disappear entirely, whereas the larger ones, representing the pencil-strokes, remain sufficiently strong. This "high light" method is only suitable in certain cases, especially when the original is a line drawing in pencil or chalk without flat tones. Our specimen, a "Study of Trees", may illustrate this description.

Reproductions in colour are made by taking three or four subsequent photographs of the original, exactly the same size. Each represents one of the basic or "primary" colours. Others, called "secondary", are composed of two primaries. Green, for instance, may be obtained

"Venice." Crayon drawing by Jan Poortenaar

Specimen of the Pantone Process
Printed by Farmer & Sons, Ltd. London, W.2.

by printing blue on top of the yellow. So with the primaries, yellow, red, and blue, a great range of combinations is possible if they are "mixed" in varying proportions, and these proportions are determined by the size of the dots in each of the three photographs. A separate block of each of these is prepared and printed in the suitable colour, the superimposed impressions merging in a final state where the colouring of the original is fairly represented. Our appendix contains a few specimens printed in three and in four colours. The deep, rich tones in "A Study of Flowers" will require four-colour blocks, whereas a brighter original may be reproduced quite well by three. This reproduction was made with a fine screen and are printed on smooth "art" paper; a coarser screen and semi-matt paper were chosen for the reproduction of the "Portrait of a Girl". It depends on the character and on the size of the original, of course, whether a coarse screen may be employed successfully or whether too much detail would be lost in that case. To the importance of the quality of the inks we have already referred.

In the process described in the foregoing lines we have to reproduce the colours as they exist in the original. The necessary division of this original into three or four components is arrived at by means of "filters". These are coloured glasses, placed before the lens of the camera, which, according to their special colour, allow certain rays to penetrate into the camera, and prevent others from so doing.

Colour-prints may also be made from monochrome originals by making two or three blocks which are printed in the colours desired. Assume the idea to be a flower in red and a glass vase in black and white; the flower will be etched away in the "black" block, and the vase in the "red" one. But we must realize that in this case the colours are varied at will, arbitrarily, and this is not "colour-printing" in the accepted sense of the word, but printing in colours.

Art paper, employed to print fine reproductions, is glossy, heavy, brittle, and will be ruined if damped. For these reasons blocks are sometimes etched deeper than normal, and these "deeply etched" half-tones, as employed in the reproduction of the "Portrait of a Girl", may be printed on matt, and even on smooth uncoated papers. The blockmaker should know what kind of paper is going to be used in such a case. These "deeply etched" or "deep" blocks are something entirely different from the "deep-etched" half-tones described above. Yet, both processes may be combined, and then we have a "deep deep-etched" half-tone! Unfortunately such denominations are used without the slightest system. Anyone may give almost any name to any process. Thus we find that often the same process is called Johntone by Mr. Johnson, Wiltone by Mr. Wilson, Hotone by Mr. Howell, Swiftone by Mr. Swift, Waltone by Mr. Walker, Miltone by Mr. Miller, Harditone by Mr. Hardiman, etc., etc., etc.

They are later adaptations of the forerunner "Pantone", invented by Mr. Ronald Trist. This process combines the very fine screen half-tone with certain characteristics of lithography, in so far as antipathy—in that case of water and grease—is now applied to ink and mercury. To this end a plate is coated with chromium, which represents the printing surface, the whites being replaced by silver. A special ink is used which contains a percentage of mercury. In this way the ink rollers keep the silver-mercury amalgam free from ink, whereas they deposit it on the chromium portions of the printing-surface, which transfers it to the paper in much the same way as a lithographic stone. We can only give a rough outline of this interesting process here. What the Pantone process may achieve on a rough paper may be seen from our specimen representing a view in Venice, a reproduction of a crayon drawing.

Ordinary half-tones are sometimes printed in special, "double tone" inks. These are used in the printing of rather coarse screens, as they develop a halo or tint round each dot. In this way the whites between the dots are tinted (generally a warm brown) so that a richer effect is obtained than an ordinary ink, even with a fine screen, would produce. Here again certain subjects are more suitable to such treatment than other. Our inset plates of bookbindings show such inks.

All processes so far described are relief-processes, and produce blocks which are printed as letterpress. We must now mention the photographic intaglio print, called "photogravure" or "gravure". Austen's pen-drawing "The Highwayman" is reproduced by this process, a light tone having been added to enrich the appearance of the print. Either flat plates or cylinders are employed, the latter and the rotary press being used for very large editions and commercial work, magazines, etc. Sometimes very thin plates are bent round a cylinder. In each of these cases the protographic image is transferred to the copper by means of a sheet of carbon paper, known as the "carbon tissue", on which the photograph of the original has been copied. This tissue is squeezed on to the copper, after which the paper is soaked with water and peeled off. (Hence the name "collogravure".) Thus the copper is provided with an "acid resist". But since we have an intaglio process, and in this case the ink has to fill the hollows in the copper, just opposite as in the case of a line or half-tone block, we want something to hold it where tones are required. This is done, and printing-units are produced by a screen which is copied on to the carbon tissue first. Its lines being open and its squares being black, it is just the reverse of the half-tone screen; it provides the carbon tissue with insoluble lines. Next, the photographic image is copied on to the "screened" tissue, and in this way the square printing-units of gelatine between the lines will harden in proportion to the light values of the photograph. If the copper is now etched, the units will acquire a varying depth in proportion to the thickness of

Illustration by
John Austen
from
Moll Flanders
by Daniel Defoe—
by courtesy of
Messrs. John Lane
The Bodley Head

"THE HIGHWAYMAN"

Reproduction of the original pen drawing by
CLARKE & SHERWELL LTD.
London, Manchester and Northampton

the layer of gelatine, a thick layer resisting the acid longer than a thin one, and the screen-lines resisting it altogether. This etching of a cylinder is shown on Plate XXXVI. The cylinders of rotary "gravure" are inked in a trough, the ink being thin and volatile, superfluous ink being taken off by a scraper, the "doctor" blade. More ink remains in deep cells than in shallow ones, and they print darker and lighter in proportion.

Hand photogravure is really a photographic aquatint method, and an older process now almost supplanted by the one described above. A very fine aquatint grain is laid down on the flat plate, which is printed like any etching or engraving on a hand-press.

An entirely different method which produces fine reproductions is called "collotype". In this we print from a gelatine surface without either relief or intaglio work, and the process therefore is akin to lithography. After copying the image the layer of gelatine is damped ("etched"), the portions which are hardened by light remaining dryer than the others, and the printing-surface rejecting or accepting the printer's ink in proportion to its dampness.

Lithography has also developed into a photographic process, the stone being coated with a thin layer which is sensitive to light ("photo-litho"). It is often combined with "offset", a method by which the printing-surface itself does not come into contact with the paper, but "offsets" its ink to a rubber roller which transfers it to the sheet or reel. In rotary printing this does not mean any waste of time, and the advantage is that the rubber surface prints well on a rough paper to an extent which neither wood, metal, nor stone will do. For rotary printing the stone, which could not be bent, is replaced by thin metal sheets bent round the printing cylinder of the press. "Offset-deep" is a recent development which compares to engraving on stone, as the image is lying slightly below the surface; this method is employed for extremely large editions so as to avoid wear during the printing. The printing-surfaces of offset, collotype, and photogravure do not require coated art papers, which is an advantage, as the durability of coated stock remains questionable, and art papers have not yet stood the test of time. For much of our printing, however, duration is not a matter to be considered.

"Manul" printing was invented in 1913 by F. Ullmann, a German, who gave it this name by reversing his own. It is a method of copying and reprinting existing prints or books. The printed sheet is laid on a photographic plate. As the whites (the paper) will reflect more light than the blacks (the ink) a negative is made from which a block may be prepared, which produces exact replicas of the original. Nowadays whole books are photographed and re-printed by photo-lithography, which does away with the cost of re-setting the text, correcting, etc. or the difficulty of letting the type "stand", and storing it.

An older, and by no means harmless method was the "*Anastatisches*

Verfahren" based on an invention of Senefelder himself. Any drawing, made on paper with greasy lithographic chalk, can be transferred to the lithographer's stone by pressing it on to it and soaking and peeling off the paper carefully. Senefelder thus could save himself the trouble of writing in reverse on the stone. Now printer's ink, if prepared with oil, will remain greasy a long time. This treatment was, therefore, applied to valuable old books, but the chemicals necessary to ensure success have spoiled many an interesting and valuable volume! Photographic reprint or collotype are now employed in such cases. A strong magnifying glass will often reveal the printing units in the case of such a copy, and by their appearance tell us, what sort of a reproduction we have in hand. But not at first sight! A good deal of study is necessary to discriminate between the many methods, which, to make matters even more complicated, have often been combined in one single print or reproduction.

SONGS BY BEN JONSON.
A SELECTION FROM THE PLAYS, MASQUES, AND POEMS, WITH THE EARLIEST KNOWN SETTINGS OF CERTAIN NUMBERS.

THE ERAGNY PRESS, THE BROOK, HAMMERSMITH, LONDON, W.

TITLE PAGE BY LUCIEN PISSARRO
FOR "SONGS BY BEN JONSON"

Reproduction printed by
WIGHTMAN & Co., LTD., Regency Street, Westminster, London, S.W.

By courtesy of
JOHN LANE, THE BODLEY HEAD, LTD., London, W.1.

CHAPTER XIV

SOME PRINCIPLES OF ILLUSTRATION

In a lecture Joseph Pennell once expressed the opinion that an illustration should not merely confirm facts and repeat them exactly as the author has written them down. Suppose, he says, a writer tells us that his hero is wearing black boots and trousers, then there is no need whatever for a draughtsman to follow up such a statement immediately with a repetition of these details. Abstract rather than real facts matter, and these the illustrator should make visible, thus completing or underlining, as it were, what the author wants to convey to the reader.

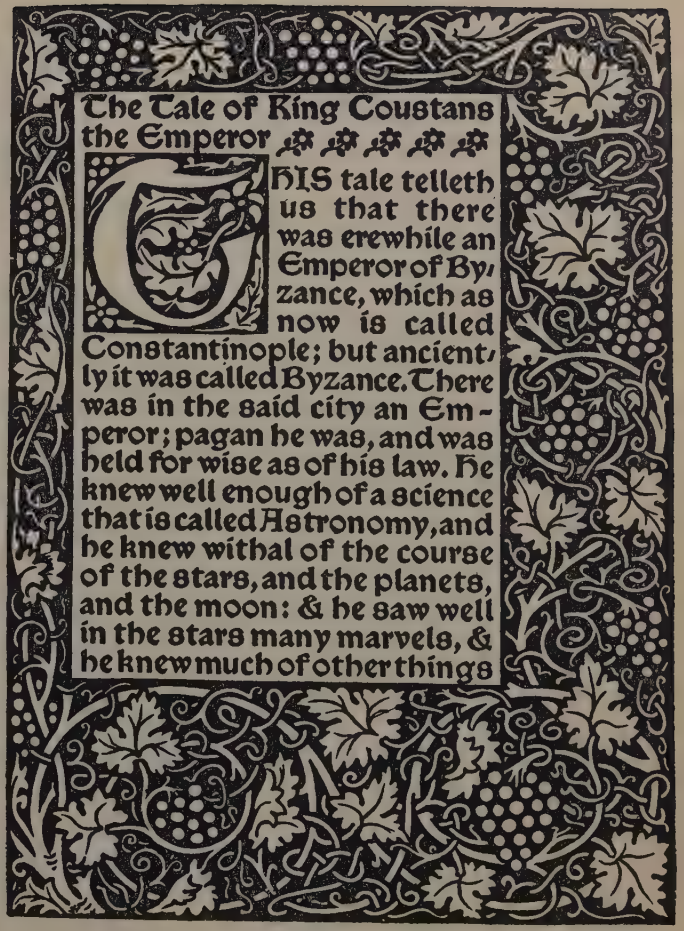
Another artist, Lucien Pissarro, has perhaps something similar in mind when he says that an illustration should be a visible form of poetry. Here again we have a demand for metaphor in imagery.

But what does the craftsman, the book-builder say?

M. Pissarro is both. Now let us hear Morris. His ideal is to make "the decoration part of the page of type", but this rule does not necessarily make an illustration a work of art, visible poetry! You can do a very dull, uninteresting drawing which harmonizes with so many lines of type of such and such a measure, and yet there may not be a pennyworth of poetry in it. Some poets, like Beardsley, might not care to be bothered by your printed area, preferring to express themselves on their own account.

Morris would not have allowed such things, but Beardsley's drawings have much more poetry in them than the illustrations of Walter Crane or Burne-Jones in Morris's books. Kelmscott and Vale Press books preferred black-and-white, Pissarro employs colour. "His aims", says Mr. Herbert Furst in his admirable book *"The New Woodcut"*, "differed from those of the Vale Press mainly in the combination of a fuller colour-scale with the text and illustrations". And how happily he put his ideals into practice may be seen in the delicate page of Jonson's "Songs", here reproduced thanks to the artist's permission, Mr. Furst's kindness, and the courtesy of the publishers, Messrs. John Lane The Bodley Head. In his private press he had the opportunity to embody in books the extremely subtle "tone values on which the impressionists laid so much emphasis". Pissarro and Sturge Moore must be praised as the men who opened new possibilities by no longer designing on, but *in* wood, as Mr. Furst so aptly expresses it. By doing so they evolved from the artistic mood in which *"The Dial"* (1889) was conceived, which Ricketts and Shannon started. That "polite, ingratiating suavity which characterizes the line of the English artists is replaced by one of robust and rustic simplicity in Pissarro's woodcuts", says Mr. Furst.

Ill. 98. Title page by William Morris.
By courtesy of Messrs. J. & E. Bumpus, London.


The Tale of King Coustans the Emperor
THIS tale telleth us that there was erewhile an Emperor of Byzance, which as now is called Constantinople; but anciently it was called Byzance. There was in the said city an Emperor; pagan he was, and was held for wise as of his law. He knew well enough of a science that is called Astronomy, and he knew withal of the course of the stars, and the planets, and the moon: & he saw well in the stars many marvels, & he knew much of other things

Ill. 99. Text page by William Morris.
By courtesy of Messrs. J. & E. Bumpus, London.

Ill. 100. Wood-engraving by Agnes Miller Parker. Device of the Nonesuch Press, London.

Ill. 101. Wood-engraving, "The Amateur Naturalist", by Nora S. Unwin. From "Exploring the animal World" by Chas. Elton. By courtesy of Messrs. Allen & Unwin, London.

Ill. 102. Woodcut (reduced) by F. Masereel. From "Liluli" by Romain Rolland. Librairie Ollendorf, Paris, and Le Sablier, Geneva.

Ill. 103. Pen drawing by John Austen. From "Moll Flanders" by D. Defoe. By courtesy of Messrs. John Lane, The Bodley Head, London.

Ill. 104. Pen drawing by B. Aylmer. From "The Boat Train". By courtesy of Messrs. Allen & Unwin, London.

Ill. 105. Pen drawing by Arthur Rackham. From the "Arthur Rackham Fairy Book".
By courtesy of Messrs. George G. Harrap & Co. Ltd., London.

Neither Crane nor Burne-Jones cut in wood. Their pencil-drawings were copied in ink by someone else, then photographed on to the wood-block, and engraved by someone else again. Remarkable woodcuts indeed! Copies from copies, we would call them now, and not even made with the copyist's own mind. For Christopher Sandford (in the "*Book Collector's Quarterly*", 1933) quotes from "*The Beginning of the World*" that in doing so "the colour traditions of black and white then taught" were followed. The phrase "then taught" shows us how the ideals of illustration have changed into what is intrinsically their opposite in a few years. The illustrators of to-day create woodcuts in a language which the wood itself has taught them, and not according to the *leçon de maintien* of tradition, which is a polite expression for aping what everybody is doing. In real woodcuts pictorial values are built up while cutting wood. Crane and Burne-Jones provided the stepping-stones to present-day illustrations, for pencil-drawings were copied with amazing accuracy before Morris's time (Plate XVI) and even type itself was set in an illustrative way (Plate XX). An interesting account of illustration-work in those days is given in "*The Brothers Dalziel*", London, 1901.

In the early days of book-production large and "heavy" type was used, and the lines cut in a wood-block with a knife harmonize well with such lettering. Gradually types became smaller and finer, and when Baskerville and others introduced the thin lines which caused so much upheaval in their day, it is only natural that a man like Bewick should try to make the lines of his illustrations harmonize with these. Even if we compare a reduced Caxton woodcut to Bewick (illustrations 63 and 64) the difference is obvious. The use of wood with the surface across the grain has been universal since Bewick introduced it, and the refinement thus possible was often carried too far. That able wood-cutter, Percy Bliss, rightly says that the delicacy of grey tones in such prints as those by Blair Leighton, Hughes Stanton, and others go to the extreme, if not beyond it. How a simple line may be abstract, part of the page, and visible poetry may be seen in Eric Gill's "*Chaucer*" (Plate XXXIII). His design and his style have been inspired by early prints, but he kept clear of imitation, as will be evident if we compare his page to the St. Christopher on the same Plate. Here the design is so abstract that the greatness of the saint is expressed by making him a giant, whose walking-stick is a palm-tree.

Modern illustrators employ the wood in a great variety of style and personal treatment. If we name only Percy Bliss and McKnight Kauffer, Brangwyn and Robert Gibbings, David Jones and Eric Ravilious or Claire Leighton, we have ever so many different characters speaking by means of the same technique of wood-block and graver. Agnes Miller Parker, Lettice Sandford, Paul Nash, and Nora S. Unwin

To the most Excellent and most Ornate man

D. ARGENT,

PRESIDENT of the COLLEGE
of PHYSICIANS in LONDON,
his SINGULAR FRIEND,
AND THE REST OF THE DOCTORS
AND PHYSICIANS HIS MOST
LOVING COLLEGS.
S. P. D.

I Did open many times before, worthy Mr. Doctor, my opinion concerning the motion and use of the heart and Circulation of the blood new in my lectures; but being confirm'd by ocular demonstration for nine years and more in your sight, evidenced by reasons and arguments, freed from the objections of the most learned and skilfull Anatomists, desired by some, and most earnestly required by others, we have at last set it out to open view in this little Book; which, unless it were pass'd through your hands, I could hardly hope that it would come abroad entire and safe, since I can

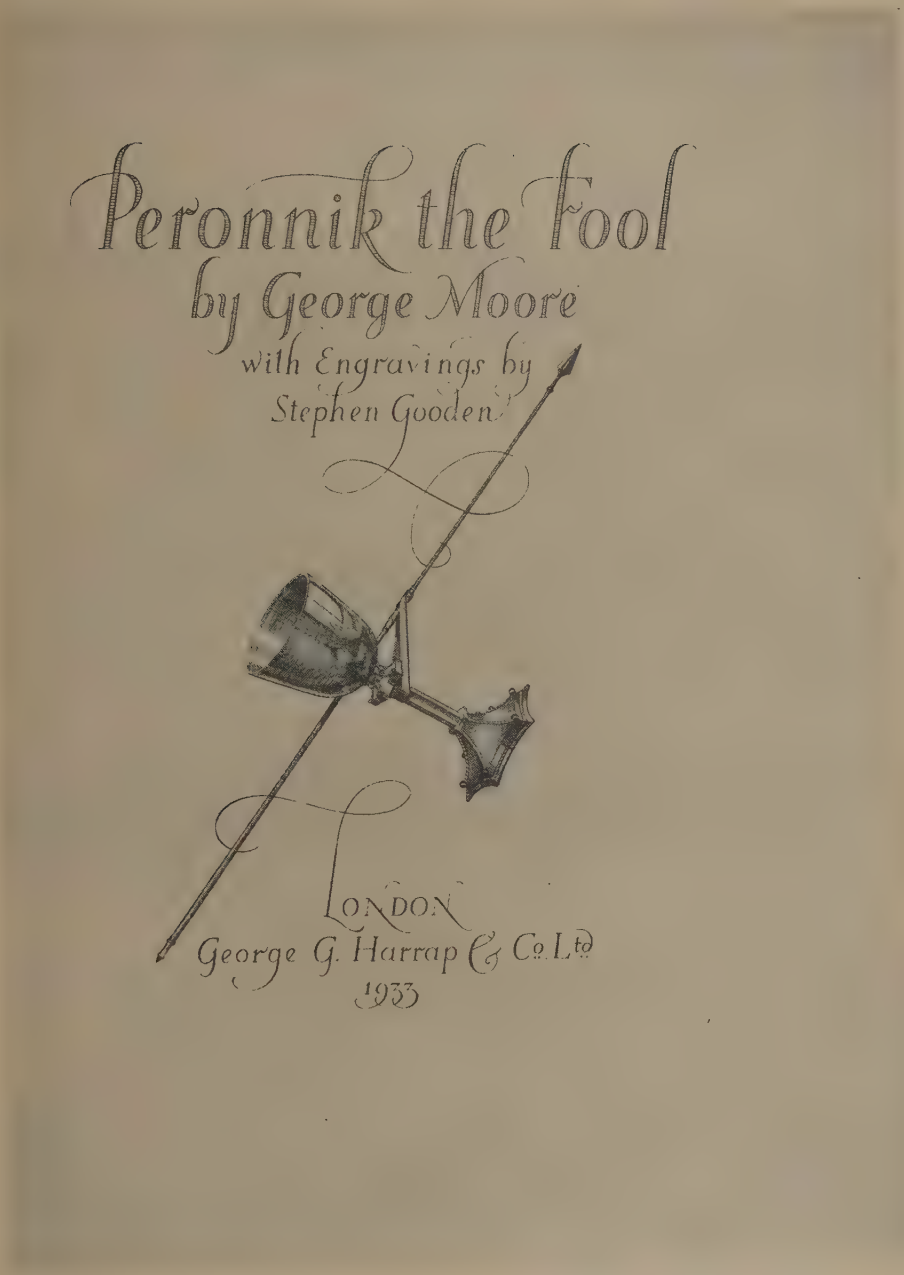
Ill. 106. A page from Harvey's "De Motu Cordis".
The Nonesuch Press, London, 1928.

are all interesting in their own way. A decorative page in *typographie pure* may be seen in illus. 106.

A lighter vein, but one possessing no less variety in style, characterizes the pen-drawing on paper, so easily reproduced in line. Hardly any restriction ties down the artist who adopts this method; but an original work of graphic art will always have the "flavour" of the material in which it is executed. Yet, think of the romantic atmosphere which pervades the penwork of such popular illustrators as Arthur Rackham, with his sweeping lines, and Edmund Dulac—and the contrast to these drawings in the designs in pure outline which Albert Rutherston or John Austen will employ. How wisely these latter allow the blank paper to have its say in their work! Then turn again to the carefully balanced, straight lines in Rockwell Kent's head- and tailpieces from the "*Canterbury Tales*", or the light, sketchy impressions by Aylmer and others.

The graver and the copperplate, so much beloved in former times, find recognition in such delicate prints as Stephen Gooden's, of whose work we reproduce a characteristic title page (Plate XXXVII), where lettering and illustration have been moulded into one harmonious whole. It is from one of the 50 finest books selected in 1934. We may be forgiven if we pass the other 49 lest this chapter, which only intends to give some close-ups, become a very long film-story.

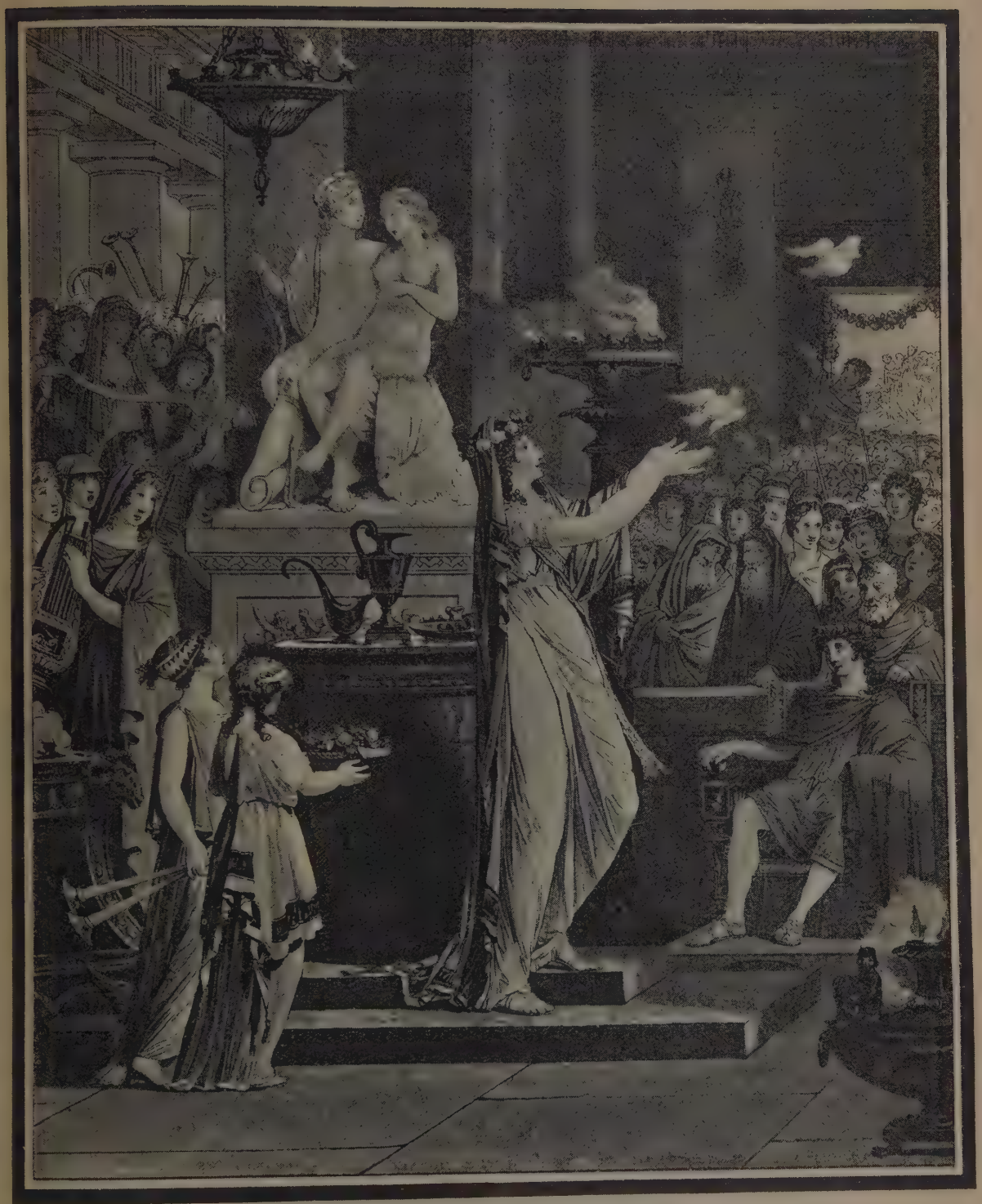
Illustration by Hedvig Collin. From "Bibi Goes Travelling".
By courtesy of Messrs. Allen & Unwin, London.



Title page, engraved by Stephen Gooden, 1933. By courtesy of Messrs. George G. Harrap & Co. Ltd.

Don Quichotte et Sancho, montés sur un Cheval de Bois, simaginent traverser les Airs, pour aller vanger Doloride.

XXII.



LES COLOMBES.

The old printing office of Plantin, still being preserved in its original condition at the Museum Plantin-Moretus at Antwerp. Left: The platen presses with buttress resistence from the rafters. Each press is provided with an inking dabber. Right: the type cases.

CHAPTER XV

MUSIC-PRINTING

Just as in the case of early block-books, where the part that was most laborious to cut in wood, the lettering, was sometimes left to be added in handwriting, music was often written in blank spaces left by the printer. Sometimes the staves were printed and the notes filled in by hand ("*Libro de Musica*", printed in Barcelona, 1510), and sometimes this was done the other way about ("*Brevis Grammatica*", Venice, 1480). In some cases both were engraved in blocks, and therefore could be printed in one working, the first book of this kind being "*Musices Opusculum*" (Bologna, Ugo de Rugeriis, 1487).

Movable type was first used, it seems, by Ulrich Han of Ingolstadt, who printed a missal at Rome in 1476. Further progress was made by Ottavianus Scotus in Venice, Pierre Attaignant in Paris, and Ottaviano Petrucci (Venice and Fossombrone).

Engraved music, printed from copperplates, appears for the first time in 1586, in which year "*Diletto Spirituale*" came from the press (Rome).

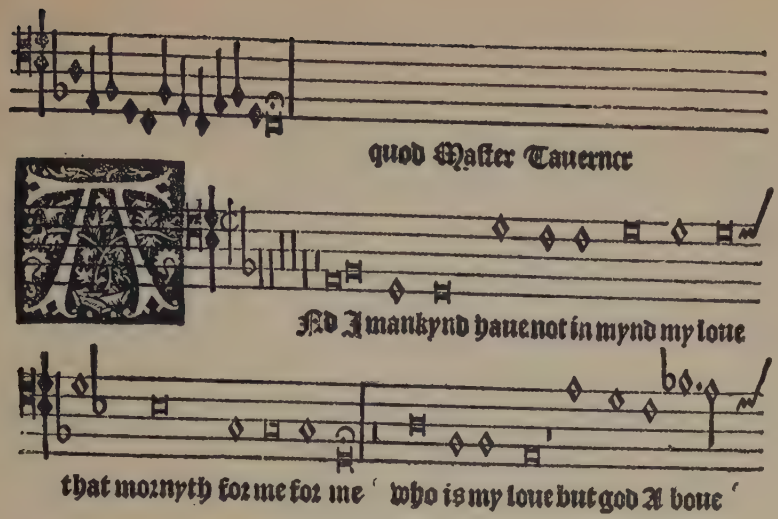
The earliest collection of music printed in England is a set of twenty songs printed by Wynkyn de Worde in 1530. Here the staves and the notes are printed separately, the former running over decorative versals which are thereby totally spoiled. In the 17th century music-books were often carried about in much the same way as our present-day notebooks, and were brought along on such occasions as family gatherings. As accompaniments were improvised, these very small booklets contained the melodies of the songs only. They often were embellished with an engraved title or frontispice, the simple music being printed from either metal plates or simple types.

When engraving on copper spread as a method of illustration it was soon discovered that the difficulty of the irregular placing of musical signs, indications, etc., which arose when it was set from type was best overcome by engraving them. But the relief which appears in paper when we print from intaglio plates is a drawback when we are to print on the back of a sheet or page. This difficulty was surmounted when lithography had been invented. The engraving was then made on thin and soft plates (tin, etc.), and a print of these was transferred to the lithographic stone by means of greasy ink, passing both the print and the stone through the press while the ink was still fresh (the "offset" principle). The stone subsequently was treated in the normal manner, and now plane prints were, and still are, being obtained which do away with the difficulty referred to. Most music is now printed in this manner.

In 1755 the German printer, J. G. Breitkopf, conceived the idea to divide the notes and staves of music-type into much smaller parts than before, and in this way it became possible to print fairly complicated music in letterpress. The drawback remains that type soon wears, and then the "joints" between the parts which compose a line or a stave will show.

Ill. 107. "Musices Opusculum", printed from blocks, 1487.

Recently Paul Koch, son of the type-designer Rudolf Koch, has revived the old method of printing the notes and the staves separately, and he uses a pale red ink for the former then, re-introducing the old square notes for typographic beauty. For cheap music the notes may be drawn and line-blocks may be made from which to print.



Ill. 108. "Twenty English Songs" (reduced).
The earliest collection of music printed in England.
Printed by Wynkyn de Worde, 1530.

Tweede Deel van
SPARENS
Vreugden-Bron,
Uytstortende
Soo Nieuwe als Singens-waerdighe Deuntjens.

Te HAERLEM,
By Michiel Segerman, Konst ende Boeckverkoper/
voor aen in de Groote Houtstraet/ over de Peerle-steegh/
in't ghestrickte Schrijf-boeck. 1646.

Ill. 109. Frontispice and title page (self size) of a 17th century music-book.

Ill. 110. Music set up from type.

CHAPTER XVI

CHRISTOPHER PLANTIN AND THE MUSEUM PLANTIN-MORETUS AT ANTWERP

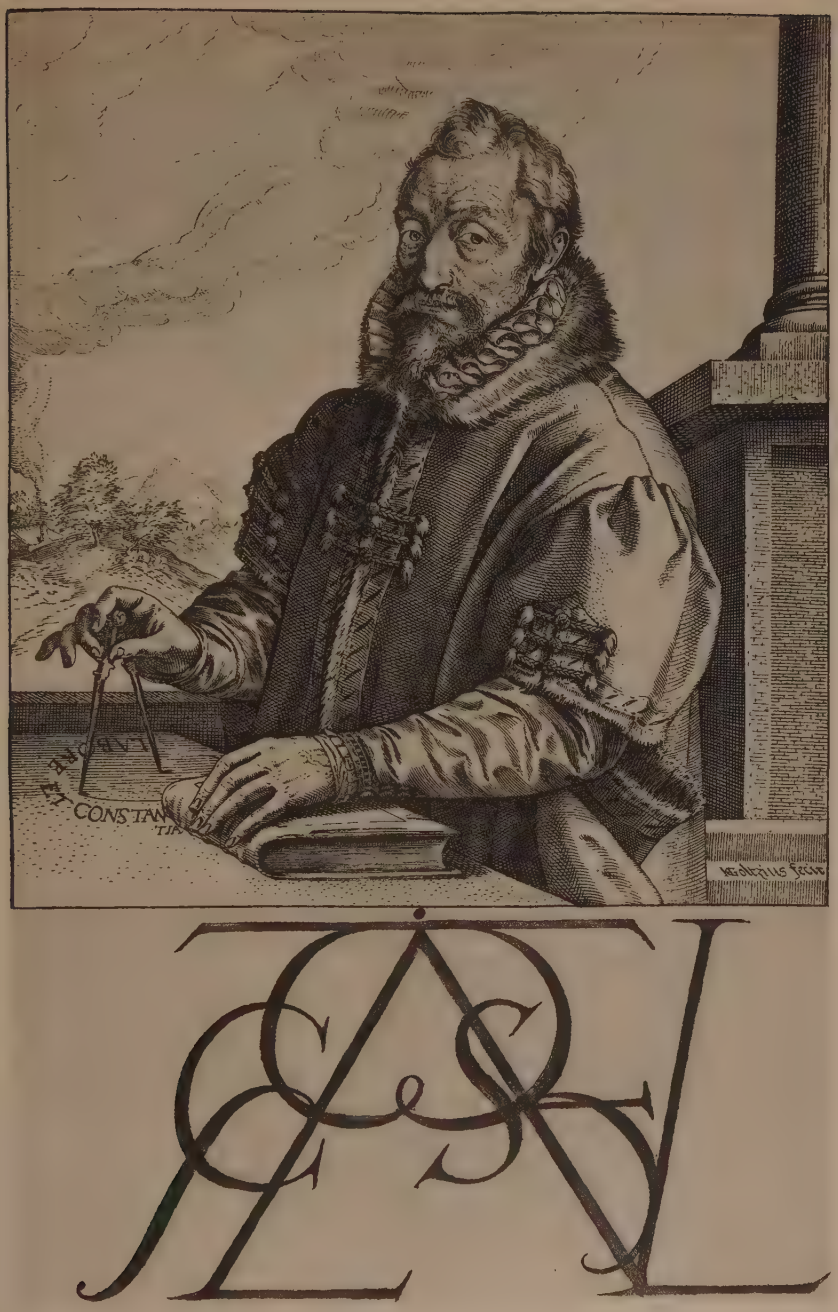
When Christopher Plantin, born at St. Avertin, near Tours in France in 1520, came and settled down in Antwerp in 1549, he knew that the surroundings would be very favourable to his typographical activities. Not only did he find there a commercial centre of international trade and important cultural life, but also one of great typographic energy, since Mathias of Goes had started printing there. Some thirty printing-offices, turning out work of a high standard, were busy when Plantin came on the scene. The young Frenchman, no doubt, made the most of the advantage which this gave him, but he also brought new energy to the movement.

In a short time the newcomer brought himself to the fore as the principal printer of the Netherlands in the 16th century, and as one of the foremost printers of Europe. He brought fame to Antwerp as a printing-centre which has not been equalled since.

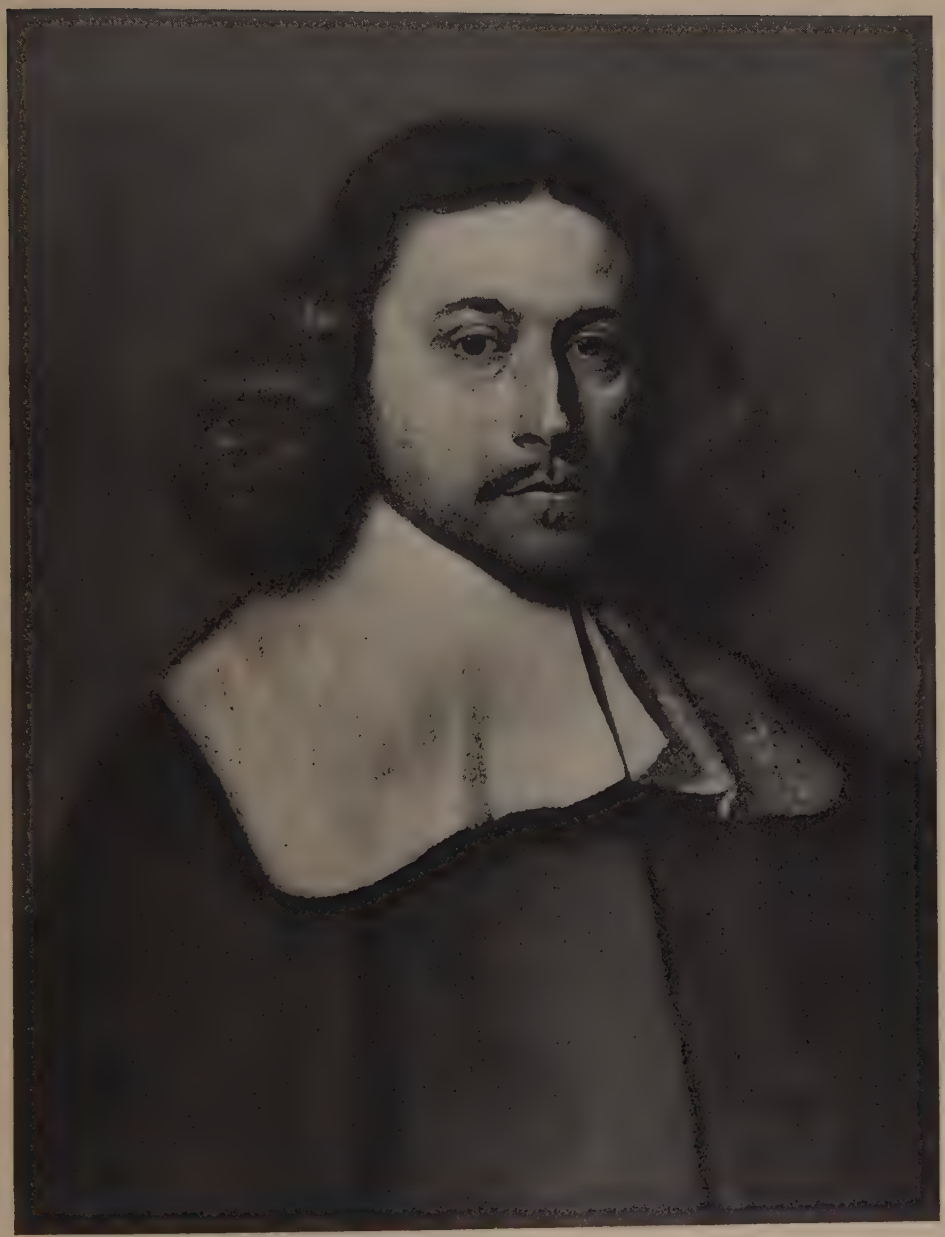
What enabled him to do all this was not only mastery of typographical technique, but also a business-acumen which almost might be termed genius. His refined taste led him to choose the best men of the day to co-operate with him; he possessed clear judgment and great knowledge in scientific matters. Thus he could secure books which were sure to become successes from the publisher's point of view, and these brought him encouraging financial results.

In 1570 Plantin was given the title of "arch-printer", which meant that he was to examine the technical ability of every one who intended to start a printing-office. There had left his press hundreds of editions which had given evidence of his all-round ability in the craft, and of his sense of balance and grace. And in many cases he shows that Robert Macé II of Caen, who must have been his early master, had in no uncertain fashion laid the foundations of his achievements.

Among the typefounders whom he employed to provide him with novel types we find several men of French origin. François Guyot and his son, both from Paris, worked during many years in the foundry which he had established in his workshop in 1563. The finest punches and matrices were made for him by such masters as Garamond, Haultin, Guillaume le Bé, and Robert Granjon, all Frenchmen. The latter designed two alphabets in *civilité*, the type which has been referred to before, and of which a specimen is included in the Appendix. Among the Netherland founders who worked for Plantin we would mention Laurens van Everbroeck, Geeraard van Embden, Hendrik van der Keere



CHRISTOPHER PLANTIN
from the engraving by H. Goltzius (1558–1616)



Balthasar Moretus II (1615—1674)
Head of the Plantin Printing Works at Antwerp from 1641
From the painting by Jac. van Reesbroeck
in the Museum Plantin-Moretus,
Antwerp

Printed by
Ten Hagen's Printing Works,
The Hague-Holland

of Ghent, and Amaat Tavernier of Belle, all excellent craftsmen.

Forty-one various fonts are shown in the "*Index Characterum*" which Plantin printed in 1567; they give an idea of the dexterity and ability of all these master typefounders. Also we must mention the beautiful woodcuts and decorated initials which Plantin likes to use in missals and Bibles. Among these are found unsurpassable examples by Pieter Huys, Pieter van der Borcht, and others.

The discipline and detailed rules which had to be observed when the men were at work in Plantin's office may be seen from the old "Rules" which are still extant in his library to-day. All the technical details which were to be observed during printing have been written down by Plantin himself in a remarkable booklet, "*La première et la seconde partie des dialogues français pour les jeunes enfants*", published in 1567. A remarkable knowledge of the craft is demonstrated by these simple descriptions.

Much care was given to the correction of the proofs; Plantin's ideal was to print without any or at least very few printer's errors. In this respect also he knew how to choose his men, and if we bear in mind that he had to print Hebrew and Syriac among other foreign languages, we see that the greatest care was involved. Cornelis Kiel, Andreas Madoets, Quinten Steenhart, F. van Ravelingen, the brothers Le Fèvre de la Broderie, and many others were his learned and reliable collaborators.

Great care was devoted to the choice of printing-papers. If we open one of the books printed by him we see that the paper has withstood three centuries, and is generally as fine as on the day it was made. He preferred French makes from Troyes, La Rochelle, Aix en Provence, Rouen, and St. Léonard (Nivernais); and occasionally paper was ordered in Frankfurt a.M., or in Ghent from Daniel de Keysere.

Many draughtsmen and engravers worked for Plantin, and in his books the illustrations are on the same high level as the typography. In this respect we can only name a few of his numerous collaborators. Godefroid Ballain of Paris, Luc. d'Heere of Ghent, Marten de Vos and Pieter Huys of Antwerp, Pieter van der Borcht and Chrispijn van den Broeck of Malines drew designs, and the wood-cutters, A. Nicolaï, A. van Leest, C. Muller, W. van Parijs, as well as the engravers Jan and Hieronymus Wierix, J. Sadeler and A. de Bruyn produced so many fine illustrations that their work for Plantin forms an important part in the history of Flemish art. On the same lines his successors, the Moretus family, continued his work in the 17th century, having among their collaborators no lesser men than Rubens, the engravers Galle, the eminent wood-cutter Christopher Jegher, and others.

It is for such reasons that Plantin, basing his work on Antwerp printing as he found it, soon succeeded in gaining priority over his col-

leagues. The finest of all his Bibles is the famous "*Polyglotta*", the masterpiece of 16th-century typography. No richer volume has ever been printed to commemorate funeral pomp than his "*Magnifique et sumptueuse Pompe funèbre de Charles V*", published on the occasion of the death of the mighty king. Nor do finer herb-books exist than those from his press by Dodoens, De l'Ecluse, or De Lobel; and works of music and missals such as those by G. de la Hèle stand unrivalled. No other printer published better topographical work than Guicciardini's description of the Netherlands, the "*Descrittione di tutti i Paesi Bassi*".

No justice would be done to the importance of Plantin if we omitted to mention how he raised printing from a small business where two or at most three presses were at work in a shop to a large enterprise. He was a forerunner of capitalistic big industry, taking large workshops, where at one time twenty-two presses were at work, and one-hundred-and-sixty hands came every day for their task. Not content with selling books in Antwerp only, he founded branches at Leyden, Paris, and Salamanca, sending special agents with Hebrew Bibles to North Africa, and even to America. He also acquired the sole rights to sell liturgical works in Spain and its colonies, and this proved to be a source of immense wealth from which the Moretus family, his successors, continued to draw big profits as long as the Spanish supremacy in the Southern Netherlands lasted (the North had fought itself free meanwhile).

As long as his health and his Antwerp business would allow, Plantin visited the famous book-market at Frankfurt regularly. As was the custom in those days his books were sent there in barrels, and offered for sale. On these occasions Plantin, or his representative, met the principal printers and publishers from all over Europe.

The complete archives of his office are still accessible to the historian; everything which referred to his activities he kept carefully, and thus we may follow his doings step by step. The Moretuses followed his example when they succeeded him, and therefore we have at our disposal their books showing purchases and sales, the letters received, the notes for letters sent, order-books showing paper purchased, lists of booksellers who were customers, names of workmen and engravers, and so forth. These are a veritable mine of information from which growing ever greater as we continue our research rises the figure of Plantin. Perhaps his archives are the greatest treasure which the Antwerp Plantin Museum contains.

Plantin had chosen "*Labore et Constantia*" as his device, and the motto is no vain boast. It is really by unending labour and perseverance in face of the serious misfortunes which often were his share, that he forced his way through life. The young boy was left to himself in Paris when he had fled with his father from his birthplace, St. Avertin, to escape the pestilence to which his mother had succumbed. He carried

on amid a great many troubles and disturbances, religious strife and warfare, financial difficulties and family troubles, and lived his last years as a famous and highly esteemed man, an example of what serious endeavour, talent, and love of labour may do.

M. SABBE

The above lines by Professor Sabbe are of great value to anyone interested in printing and its history, since the Museum Plantin in Antwerp, of which he is curator, possesses not only the valuable library of the great printer, with all the manuscripts and early printed books, but because in this unique establishment may be seen the only original early printing-office in existence in the world. The bookshop where Plantin sold his books over the counter is still there. We may see, too, the proof-reader's room, the typefoundry, and the copperplates and wood-blocks used to decorate his books. His type, his presses, and his bookkeeping have all been preserved, and with these the works he printed themselves are a source of enjoyment to anyone who appreciates the beauties of prints and typography—the art of the book.

Woodcut by Victor Stuyvaert.

INDEX

A

Acid resist,158
Addenda,129
Alcuin,6
Altdorfer,57
American Type Founders,96
Amman,57
Antigone,25
Antiqua,3
Aquatint,151
Arcangelis, N. de,66
Arden Press,88
Argentieri,66
Arrighi,10
Ars Memorandi,33
Ars Moriendi,33
Ashbee,88
Ashburnham,138
Ashendene,87,132
Attaignant,169
Auchinleck Press,84
Audin, M.,23
Austen, J.,158,168
Author's corrections,112

B

Bade, Josse,56,58
Barker,Robert,80
Bartlett, E. E.,27
Bartolozzi,152
Baskerville,22,66,82,120
Bauer,133
Bauer Typefoundry,27,87
Beardsley,161
Beaujon,16
Beck'sche Buchdruckerei,29,60
Bell,84
Benton,110
Bernardini,66
Berté,Jean,150
Berthelet,78
Bertieri,66
Bewick,148,166
Bible,1,33,40,41,44,47,48,49,80,174
Biblia Pauperum,33
Bibliothèque Nationale,144,145
Bifur,25
Black letter,17,20
Black step,130
Blaeu (Blavius),73,132
Bliss,166
Bodley,80,144,145
Bodley Head, The,161
Bodoni,23,27,66
Bodoni Press,66
Book Coll. Quarterly,89
Borders,128
Boswell,84
Botticelli,66
Bramante,3
Brangwyn,166
Breitkopf,170
Bremer Presse,60
Breydenbach,56
Brief,32
British Museum,88,144
Bumpus,101
Burne-Jones,86,161,166
Burr,152

C

Cambellotti,66
Cambridge,78,82
Campagnola,12
Cancelleresco,61
Cantico Canticorum, 33
Capitalis quadrata,4,12
„ rustica,4
Carbon tissue,158
Carlègle,25,72
Carnegie,145
Carolus Magnus,6
Carriage,134
Carter, H.,23
Case,105
Casing,142
Cassandre,25
Caslon,14,17,20,24,82,84,88,92
Cast off,112
Castaldi,61
Catholicon,47
Caxton,24,76,82,166
Centaur,27,88
Champ fleuri,14
Charlemagne,6,138
Chapman,154
Chaucer,25
Chaucer type,24,101
Chase,106
Cheltenham,27
Chepman,78
Chéret,153
Chinese,29
Chiswick Press,88,96
Chodowiecki,60
Civilité,22,23,172
Clarendon Press,88,96
Cloister,27
Cobden Sanderson,86,144
Cochin, N.,20,72
Cockerell, D.,140,144
Codex, codices,138
Cole, Timothy,148
Colines,68
Colophon,49,128
Collotype,159
Common Lot,Brothers of the,32
Coomaraswamy,88
Corrigenda,129
Coster,41—44
Cottage style,144
Craig, Gordon,60
Cracherode,144
Cranach,57
Crane,Walter,86,161,166
Crawford,144
Cross,137
Curwen Press,27,88,89

D

Daguerre,155
Dalziel,148,166
Dance of Death,57
Dandy,122
Dante,61,72
Da Spira,61
Da Vinci,3,14
De Arcangelis,66
Deberny-Peignot,16,20,25
Debucourt,151
Deckle,121
De Jonghe,42
De Lorenzo,61
Denham,78
Dentelle,143
Derome,143
De Roos,25,74
De Thou,143
Dial,The,161
Dibdin,20,144
Didot,17,23,25,72,94,104
Distribution,106
Doctrinale,33
Donatus,33
Doré,148
Dorique,25
Dotted print,146
Double-tone ink,135,158
Doves Bindery,144
Doves Press,25,86,88
Dritzehn,46
Drugulin,60
Duffus,94
Dulac, Edmund,168
Dummers,20
Dürer,3,6,10,20,54,56,57
Dziatzko,43

E

Edition de luxe, 121
Ehmke,60
Einblattdruck,30
Electro,110,150
Elsevier,17,22,73,137,143
Empire,143
Ems,ens,104
Engraving,12,103,146,150
Engraving machine,110
Enschedé,23,25,47,74,110
Eragny Press,88
Erasmus,20,22
Erbar,60
Ernst Ludwig Presse,60
Errata,128
Essex House Press,88
Estienne,27,68
Etching,150
Eve,143

F

Falkenstein,48
Fanfare,143
Fell,17,80
Fichet,68
Fillets,140
Filter,157
Fiske,145
Flat-bed press,134
Fleischman,17
Fleuron, The,89
Fly-leaves,128
Footnotes,129
Forme,106,132,134
Formschneider,54,146
Foudrinier,120
Fournier,17,23,66
Fraktur,6,57
Francis I,16,23,68,143
Franklin,72,82,94
Fraser, Lovat,89
Frassinelli,66
Frisket,132
Froben,54
Frontispice,128
Fumagalli,61,66
Futura,27
Furniture,106
Furst, Herbert,161

G

Galley,113
Garamond,16,68,72
Gavarni,153
Gelthuss,46
Genschfleisch,44
Gentzsch & Heyse,25
George II, III,144
Gibbings,166
Gill, Eric,27,88,166
Giotto,13
Godofredus,23
Goes, M. of, 137, 172
Goethe,48
Golden Cockerell Press,88
Golden type,13,24
Gooden, Stephen,89,168
Goodhue,100
Gothic,2,3,6,10,129,146,144
Goudy,27,96,98
Grandjean,17
Granjon,16,22,23,68,172
Grasset,24
Gregynog Press,88
Greeks,1
Grenville,144
Gress, Edmund,27
Grolier,138,142,145
Groote, Gerhard,32
Grotesque,13,17
Grotius,73
Gutenberg,36,38—49,54,103
Gutenberg Presse,60

H

Haag-Drugulin,60
Haebler,38

Hahn (Han),61,169
Half-tone,155,156
Hamlet,56,57
Harley,144
Headband,140
Heilman,46
Heinecken,140
Heynlin,68
Hewitt, Graily,17,27
Hoepli,66
Holbein,54,57
Horae,68
Hornby, StJ.,87
Horne,100
Hunter, Dard,27,100
Huth,144
Huntingdon

I

Ibarra,23,66,82
Imposition,113,135
Imprimerie Nationale,72
Imprint,128,137
Inks,49,136,158
Intertype,108
Istituto del Libro,66

J

Jannon,16
Japanese,36,54,150
Jenson,12,61
Jones, David,88,166
Junius,42

K

Kabel type,27
Kells, Book of,4
Kelmscott Press,12,24,87,98,132
Kennerley,27
Kent, Rockwell,168
Kittredge,100
Kleinmeister,57
Kleukens,60
Klingspor Typefoundry,25,60
Koberger,54,56
Koch, Paul,60,170
Koch, Rudolf,25,60,89,98
Kruitwagen,38—43

L

Laboureur,151
Lactantius,6,60
Laid paper,121
Lakeside Press,100
Leading,105
Le Bé,72,172
Le Gascon,143
Linotype,27,108,109
Lithography,153
Livres d'heures,68
Loading,117
Locarno,27
Lorenzo, de,61
Lorilleux & Bolton,121
Low de Vinne,96
Ludlow,27,108
Ludwig & Mayer,60
Luther,56,68

M

Maddox,133
Maggs,101
Magnus,143
Making ready,134
Malherbe,150
Mansion,76
Manuale,66
Manul,159
Manutius,6,10,12,61,103,130
Marchant,68
Marechal,68
Marshall, Thos.,17
Martens,73
Maximilian,57,60
Mazarin,47,48,144,145
McMurtrie,27,98
Measure,105
Mearne (Chas. and Samuel),144
Mediæval,27
Mégret,16
Mentelin,54
Menzel,60
Merrymount,98,100
Metropolitan Museum, 101
Meynell, F.,13,89
Mezzotint,152
Michel Angelo,3
Mifflin,100
Millar Parker, 166
Miller,78
Milton,82
Modern face,24
Molière,72
Monastery bindings,138
Monotype,25,27,28,109
Montanus,73
Moretus,73,174
Morgan,145
Morison, S.,10,17,20,23,96
Morocco,144
Morris, W.,12,13,24,60,73,74,84,89,98,144,161,166
Mould-made paper,120
Moxon,82
Music,169

N

Nash, P.,166
Nerfs,140
Neuland,25
Newdigate,16,88
Nicholson,133
Niepce,155
Nonesuch Press,27,89

O

Offset,159
Old Style,27
Olschki,66
Orcutt,82,94
Overlaying,134
Oxford,78,80,101,154

P

Pacioli,10
Padeloup,143
Pafraet,72
Palimpsest,34
Pannartz,6,60
Pantone,158
Papyrus,116
Paramat,136,150
Parker Winship,101
Payne, Roger,144
Pennell,161
Penrose's Annual,89
Petrucci,169
Pfister,54
Philobiblon,80
Photography,155
Photogravure,158
Photo-litho,159
Pica,104
Pichon,25,72
Pie,106
Pierpont Morgan,138,145
Pigouchet,68
Pissarro,74,150,161
Plantin,23,68,73,80,172,etc.
Platen,132
Poe,154
Pointillé,143
Point system,104
Poliphilus,61
Pollard,87,98
Polyglotta,80,174
Prelims.,128
Primaries,156
Print User's Yearbook,89
Private press,87
Proctor,38
Psalter,49
Pynson,78

Q

Quad, quadrat,104
Quaritch,104
Quentell,56
Quoins,106

R

Rackham, A.,168
Raibolini,16
Ransom,96,100
Ratdolt,61
Recuyell,76
Reglet,106
Register,49,132
Remarque,102
Rembrandt,151
Renaissance,29,54
Renner,27,60
Richard & Millar,25
Richelieu,68
Ricketts,88,161
Risorgimento,66
Robert, Louis,120
Rockwell Kent,168
Roffet,143
Rogers, Bruce,12,27,88,100,101
Romain du Roi,72
Roman lettering,1etc.
Romanée,25
Roos, de,25,74
Rops,151
Rubra,49
Rubricator,49
Rudge,101
Rusch,6
Rutherston,168
Ryland,152
Rylands, John,32,144

S

Sabbe, M.,23,73,137,172—175
Sandford,166
Sans serif,13,17
Schatzbehalter,56
Schedel,56
Schoeffer,23,41—49,137
Schwencke,48
Screen,122,135,158
Scriptorium,29
Senefelder,153,160
Serifs,13,16
Severini,66
Shakespeare,56,80
Siberch,78
Signature,130
Sikkel,150
Simon, Oliver,89
Size (in paper),117
Sizes (paper sizes),123
Sloane,144
Slugs,103
Smith,Percy,89
Soda,119
Soft ground,151
Soncino Press,23,61
Sorbonne,68
Spaces, spacing,104,105
Speculum,33,40,43
Spira (Speyer),61
Stanhope,132
Standardizing,123,124
Star Chamber,80
Stationers,80
Steiner-Prag,60
Stellar,27
Stereo,109
Stipple engraving, 152

Stols, A. A. M.,74
Stone,106
Straight grained,144
Subiaco,6,60,87
Sulphite,119
Supra libros,138
Sweynheym, 6,60,152

T

Talbot,155
Theuerdanck,6,57
Thielman Kerver,68
Thorp,88
Tiemann,25,60
Title, half-title,128
Torquemada,60
Tory,10,16,17,68
Toulouse Lautrec,153
Trafton,H.,27,60
Treyford,27
Trittenheim,47
Troy type,24
Two-rev., 134
Tying up,106
Tympan,132
Type height,104
Typograph,108
Typographie pure,72,88

U

Uncials,4
Underlaying,134
Unger,60
Unwin,166
Updike, D. B.,20,27,92,98,100

V

Vale Press,88,161
Van der Vossen,25
Van Dyck,17
Van Eyck,36
Van Hoytema,154
Van Krimpen,25,74
Van Os,72
Van Ravelingen,73
Van Royen,25,74
Vatican,61
Vautrollier,78
Vérard,68
Vicentino,10
Village Press,96,98
Voskens,17
Vostre,68

W

Waesberge,73
Walbaum,89
Waldo-Benton,110
Walker, Emery,24,84,87,88,101
Walter,133
Warde, Beatrice,16
Water inks,36,136
Watermark,121
Watson, Caroline,152
Weiss,27,60
Wendingen,74
Westfalia,72
Whale Press, Woolly,98
Wharfdale,134
Whittingham,88
Widener,145
Wiegand,60
Wolgemut,56
Woodcut,146
Wove paper,121
Wynkyn de Worde,76,78,169

Y

Yale,48

Z

Zainer,54
Zedler, G.,43,47
Zell,39—40
Zinco's,155

APPENDIX

Godofredo de bullõ vẽcedor d turcos
✝ Rey de Jerusalem. ✝

Godfrey of Bouillon, King of Jerusalem.
From a Spanish book, Vasco Diaz Tanco, 1547.
By courtesy of Messrs. Maggs Bros., London.

BODONI

Members of the Bodoni Family held in London Stock

Ultra Bodoni

Bodoni Open

Bodoni *Bodoni Italic*

Bodoni Bold

Bodoni Bold Italic

Ultra Bodoni Italic

Bodoni Book

Bodoni Book Italic

Ultra Bodoni Condensed

CARD BODONI

CARD BODONI BOLD

ENGRAVERS BODONI

Bodoni Bold Shaded

Ultra Bodoni Extra Condensed

Sole Agents for the American Type Founders Co.,

C.W. SHORTT & Co LIMITED

8 Fulwood Place, High Holborn, London, W.C.1

Types cast by American Type Founders Sales Corporation
300, Communipaw Avenue, Jersey City, New Jersey.

Sole European Agents

C.W. SHORTT & CO LIMITED

MODERNISTIC

Bodoni Open Garamond Open

Goudy Handtooled

BOUL MICH

Goudy Handtooled Italic

CHIC GALLIA

Cloister Cursive Handtooled

Rimmed Litho

Cooper Tooled Italic

Advertisers Gothic Outline

Cooper Hilite

Advertisers Gothic Condensed Outline

Comstock

Caslon Openface

CASLON OPENFACE TITLE

Caslon Shaded

CONDENSED COMSTOCK

Cheltenham Bold Outline

Chelt. Inline Extended

Cheltenham Inline

Chelt. Inline Extra Cond.

STYMIE INLINE TITLE

8 FULWOOD PLACE, HIGH HOLBORN, LONDON, W.C.1.

Types cast by American Type Founders Sales Corporation
300 Communipaw Avenue, Jersey City, New Jersey.

MEDIAEVAL ANTIQUA

NAAR

ONTWERP

VAN

HEINRICH JOST

FRANKFURT·M

Schriftgießerei

LUDWIG & MAYER

Frankfurt·Main

Alphabet by Heinrich Jost. Typefoundry Ludwig & Mayer, Frankfurt-Main, Germany.

UTOPIA

Written in Latin by
Sir Thomas More
and done into
English by
Ralph
Robynson

NEW YORK
THE LIMITED EDITIONS CLUB
1934

Title page by Bruce Rogers

Some Thoughts on the Ornamented MSS. of the Middle Ages

BY

William Morris

PRINTED
on his Albion Hand Press, with an Account
of its Travels from the Closing
of the Kelmscott Press
to the present
Day

ISSUED ON THE ONE-HUNDREDTH ANNIVERSARY
OF WILLIAM MORRIS' BIRTH
March 24th, 1934

Privately Printed
PRESS OF THE WOOLLY WHALE
New York

Title page by Melbert B. Cary Jr.

A SPECIMEN BOOK

OF TYPES & ORNAMENTS

IN USE AT

THE CURWEN PRESS

PLAISTOW · LONDON

PUBLISHED FOR THE CURWEN PRESS BY

THE FLEURON LTD

101 GREAT RUSSELL STREET, LONDON

1928

Title page, The Curwen Press, London

ERBAR-MEDIAEVAL
OPEN KAPITALEN

A B C D E F G
H I J K L M N
O P Q R S T U
V W X Y Z
1 2 3 4 5 6
7 8 9
0

ALFABET EN OPEN KAPITALEN (LICHTE VERSALIEN)
ONTWORPEN DOOR J. ERBAR VOOR DE „SCHRIFT-
GIESSEREI LUDWIG & MAYER", FRANKFURT-MAIN

"Mediaeval" alphabet, designed by J. Erbar
Typefoundry Ludwig & Mayer, Frankfurt/Main, Germany

A DISTINGUISHED AND EXCLUSIVE LINOTYPE BOOK FACE

ESTIENNE WAS NAMED IN HONOR OF THE famous sixteenth century printing family whose work is cherished by posterity. The face is exclusive to Linotype, available in no other form. It provides a notably new type texture—a distinctive, wholly charming pattern and appearance when set in mass form quite unlike that of any other face. The dignity and beauty of the capitals, and the grace and charm of the lower case letters are apparent at a glance.

ABCDEFGHIJKLMNOPQRSTUVWXYZ

ABCDEGJMNPRTY&

ABCDEFGHIJKLMNOPQRSTUVWXYZ

This is the Linotype
GRANJON

LIKE MOST USEFUL TYPES, GRANJON IS NEITHER wholly old or wholly new. It is not a copy of a classic face, nor an original creation, but rather something between the two. This comment upon its introduction (from *The Fleuron,* 1926) is revealing: ". . . Fortunately a true Garamont design has been given to the public: That admirable 'later' Garamont of the Egenolff sheet which so distinguished French books from 1550 on, and had so good an influence over Dutch and hence English taste. The first and immeasurably the best of modern revivals of this letter was that of the Linotype Company. . . This is a book face worthy to rank with Caslon for usefulness, with Centaur for beauty; sharp enough for publicity, clear enough for a dictionary. For some reason the face is called 'Granjon'. It would seem that Garamont's name, having so long been used on a design he never cut, is now by stern justice left off the face which is undoubtedly his."

AMSTERDAM NEW YORK TRADE LINOTYPE MARK BERLIN LONDON

THAT CLASSIC ENGLISH OLD STYLE

Linotype
Caslon Old Face

Few types have the complete usefulness that Caslon so happily possesses. Linotype Caslon Old Face is the fruition of many years study of the Caslon types and their use by those great printers who did their most distinguished and useful work with them in their purity. It evolved from the original patterns of William Caslon I, and is true and authentic in every detail; entirely uninfluenced by the many and various "recuttings" and alleged improvements of later decades. Like so many other Linotype faces, Caslon Old Face is accompanied by a full series of related decorative material—many of the borders and ornaments from Caslon's originals.

Two Authentic Revivals of Type Classics

LINOTYPE JANSON

In the latter portion of the seventeenth century, Anton Janson, Leipsic punchcutter and typefounder, issued the distinguished book type which bears his name. In recutting this fine old face, Linotype letter-draughtsmen and punchcutters have been fortunate in retaining its sharpness and sparkle, as well as "the beautiful clarity and comeliness of its drawing" which, in the judgment of a foremost critic, makes Janson "one of the very finest types now available."

LINOTYPE BASKERVILLE

is a weight-for-weight and curve-for-curve copy of John Baskerville's celebrated printing type. The pattern for the cutting was a complete font of 14 point, cast from Baskerville's own matrices—exhumed at Paris in 1929. It is important to keep in mind that Linotype Baskerville is not an "adaptation"—it is an authentic revival.

J B

AMSTERDAM NEW YORK TRADE LINOTYPE MARK BERLIN LONDON

PRINTED IN U. S.

THE

superior man is quiet and calm,

waiting for the appointments of

Heaven, while the mean man

walks in dangerous paths,

looking for lucky occurrences.

CON
FU
CIUS

Locarno, designed by Rudolf Koch, Typefoundry Gebr. Klingspor, Offenbach a. M., Germany

ENGLISH BOOKS PRINTED ABROAD

As late as the middle of the seventeenth century English books printed abroad were both numerous and interesting. Until the accession of Elizabeth the most important section of them was formed by the Latin Service-books, for the production of which the printers of Paris, Rouen, and Antwerp were specially well equipped. When the Reformation had begun, not only were many controversial works printed in Protestant districts abroad, but for twelve years ⟨1525–1537⟩ all editions of Tyndale's New Testament and both the first and second edition of Coverdale's Bible were printed out of England.

During the middle of the seventeenth century printing in England, as in other countries, became cheap and bad. After the Restoration it improved, mainly under Dutch influence. Throughout the eighteenth century a good deal of interest was taken in the form of books, and there were many experiments in luxurious printing, although most of these produced on what are now considered wrong lines.

From a catalogue of an exhibition of old books in the British Museum 1926

»Wren« type, designed by W. Tiemann, Typefoundry Gebr. Klingspor, Offenbach a. M., Germany.

CREDO EGO VOS, IUDICES, MIRARI QUID SIT QUOD, CUM TOT SUMMI ORATORES HOMINESQUE NOBILISSIMI SEDEANT, EGO POTISSIMUM SURREXERIM, QUI NEQUE AETATE NEQUE INGENIO NEQUE AUCTORITATE SIM CUM HIS, QUI SEDEANT, COMPARANDUS. OMNES HI, QUOS VIDETIS ADESSE, IN HAC CAUSA INIURIAM NOVO SCELERE CONFLATAM PUTANT OPORTERE DEFENDI, DEFENDERE IPSI PROPTER INIQUITATEM TEMPORUM NON AUDENT. ITA FIT UT ADSINT PROPTEREA, QUOD OFFICIUM SEQUUNTUR, TACEANT AUTEM IDCIRCO, QUIA PERICULUM VITANT. QUID ERGO? AUDACISSIMUS EGO EX OMNIBUS? MINIME.

AN TANTO OFFICIOSIOR QUAM CETERI? NE ISTIUS QUIDEM LAUDIS ITA SUM CUPIDUS, UT ALIIS EAM PRAEREPTAM VELIM. QUAE ME IGITUR RES PRAETER CETEROS IMPULIT, UT CAUSAM SEX. ROSCI RECIPEREM?

Daphnis, designed by W. Tiemann, Typefoundry Gebr. Klingspor, Offenbach a. M., Germany

OAKS MAY FALL WHEN
THE REED WILL BRAVE
THE STORM + THE FEAR
OF THE LORD IS THE BE
GINNING OF WISDOM +
FINE FEATHERS MAKE
FINE BIRDS + ALL THAT
GLITTERS IS NOT GOLD +
SIMPLICITY IS THE SOUL
OF TRUTH + ANY WORK
IS BETTER THAN NONE
AT ALL + NO MAN CAN
SERVE TWO MASTERS +

Neuland, designed by Rudolf Koch. Typefoundry Gebr. Klingspor, Offenbach a. M., Germany

This is Spalding & Hodge's
„Photex" 58½ × 91½ cms.,
31.2 Kilos, ·23 × 36 inches
70 lbs. 500 sheets

THE BIFUR

DESIGNED BY CASSANDRE, DERIVES ITS NAME FROM "BIFURCATION", BECAUSE ITS FORM HAS BEEN SPLIT INTO TWO COMPONENTS : BLACK, AND A LINEAR ARRANGEMENT WHICH CREATES A GREY TONE. THUS, THE BIFUR IS COMPOSED OF TWO COLOUR VALUES

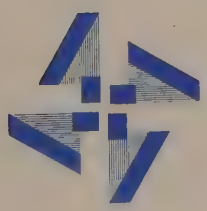
A B C D E F

G H I J K L

M N O P Q

R S T U V

W X Y Z



DEBERNY-PEIGNOT, TYPEFOUNDERS, PARIS, XIV

FRANÇOIS-AMBROISE DIDOT

born in Paris in 1720, was the most renowned printer of his day. He died in 1804. He started his activities as a printer in 1757, assisted by the engraver Waflard and his son Firmin, who became a well-known printer himself. These two engraved the famous Didot type for François-Ambroise who, following the footsteps of Fournier-le-Jeune, brought order in the chaos of type sizes then current. He introduced a system, according to which the unit, the point, was 4/10th of a millimetre, each body of types having a uniform number of points in height and width. Thus vague names of historic origin, such as Gaillarde, Petit-Romain, St Augustin, etc., were practically done away with in France about 1800. This system was adopted all over the continent, but it was not before 1883 that the United State typefounders introduced the point system.

The Didot type, like the Bodoni, shows a striking contrast between the heavy main-strokes and the thin serifs and hair-lines. This typographical change had already begun to appear in Philippe Grandjean's characters.

DEBERNY-PEIGNOT, TYPEFOUNDERS
PARIS, XIV

Nicholas Cochin

DEBERNY-PEIGNOT, TYPEFOUNDERS, PARIS XIV

Whereas in the XVIth century the woodcut was prominent in book illustration, engraving on copper came to the fore after 1600, and reached the utmost refinement in the XVIIIth century. The thin lines of engraving influenced the shape of letters, and in the specimen books of various typefounders after 1750 the character of engraved work is predominent in type faces. It is unlikely that any particular artist can be given the credit of designing this decorative letter. Special features are the long ascenders and the tilt of the *s*.

The ascenders and the peculiar grace of both capitals and lower case letters make this type show at its best in a few display lines and a decorative arrangement. The italics are equally graceful, and called after Moreau-le-Jeune. The Cochin is marked by elegance, the Didot's main characteristic is dignity.

A B C D E F G H
I J K L M N O
P Q R S T U
V W X Y Z

WESTFIELD, N. J.

THE GARAMONT

is an old French letter, first used in a book which Geofroy Tory printed on command of the King of France in 1530. It was called Le Sacre et Coronement de la Royne. This oldest form of the Garamont roman is called the Terentius type, and derives its name from "Terentius Maurus", printed by Tory's friend Simon de Colines. The Garamont is a perfect book face, graceful if compared to the severe, 19th century Didot, which is shown on the second of these four pages. The Garamont italic also is a noble design :

Il pleure dans mon cœur
Comme il pleut sur la ville,
Quelle est cette langueur
Qui pénètre mon cœur ?

O bruit doux de la pluie
Par terre et sur les toits !
Pour un cœur qui s'ennuie
O le chant de la pluie !

Deberny-Peignot, Typefounders, Paris, XIV

OVIDE

LES MÉTAMORPHOSES

TRADUITES EN FRANÇAIS

PAR

JEAN FORET

PARIS

TYPOGRAPHIE DE LÉON PICHON

1934

These pages,
printed on "PUR FIL LAFUMA" *paper by*
Léon Pichon *of Paris*
are set in
"LE DORIQUE"
a type designed by E. Carlègle *and* Léon Pichon
for the foundries
Deberny & Peignot, *Paris*

★

The woodcut by Carlègle
is taken from
"LA MUSE DE RONSARD"
printed and published
by
Léon Pichon,
Paris

sacrée. Celle-ci admire longtemps ces eaux qu'un cheval a fait sortir de la terre en la frappant de ses pieds; elle contemple tout autour d'elle les ombrages de l'antique forêt, les grottes, les prairies émaillées de fleurs sans nombre; elle félicite les filles de Mnémosyne sur leurs travaux et sur leur séjour. La première des neuf sœurs lui dit alors :

Ô déesse du Triton, toi qui aurais pu, si ton courage ne t'avait portée vers de plus grandes entreprises, te mêler à notre chœur, tu dis la vérité; tu as bien raison de louer nos travaux et notre séjour; oui, nous jouissons d'un heureux destin, pourvu que

ET cum oratis, non eritis sicut hypocritæ, qui amant in synagogis, et in angulis platearum stantes orare, ut videantur ab hominibus: amen dico vobis, receperunt mercedem suam. Tu autem cum oraveris, intra in cubiculum tuum, et clauso ostio, ora patrem tuum in abscondito: et pater tuus qui videt in abscondito, reddet tibi. Orantes autem, nolite multum loqui, sicut ethnici. putant enim quòd in multiloquio suo exaudiantur. Nolite ergo assimilari eis. scit enim pater vester, quid opus sit vobis, antequam petatis eum.

Sic ergo vos orabitis:

PATER NOSTER, QUI ES IN CŒLIS:
Sanctificetur nomen tuum. Adveniat regnum tuum.
Fiat voluntas tua, sicut in cœlo, et in terra.
Panem nostrum supersubstantialem da nobis hodie.
Et dimitte nobis debita nostra, sicut et nos
dimittimus debitoribus nostris. Et ne
nos inducas in tentationem.
Sed libera nos a malo.
AMEN

C.244. Hoe dat Ihs heme vertoende. ij. van sinen pongheren. op enen bergh int lant van Galileen. dien hi hen hadde ghenoemt.

Dar na so ghinghen die ellef pongren int land van Galileen. op din berch din hen Ihc hadde ghenoemt. Aldaer so vertoegde hem Ihc sinen pongren. eñ alse sine saghen so anebedden sine. nochtan so tuivelde hen somen. Doe sprac Ihc tote hen eñ seide. Mi es ghegheuen volcomene macht. beide in hemelrike eñ in ertrike. gaet eñ leert dat volc van ertrike. eñ doeptse alle in den name des vader eñ des soens eñ des heilegs gheests. eñ leert hen te houdene al dat ic u hebbe ghesegt. Eñ ic gheloue u. dat ic met u bliuen sal toten inde van der werelt.

C.245. Hoe dat Ihs heme vertoende sinen pongheren daer si saten eñ aten. daer hise berespde. omme dat si niet ghelouen en wouden denghenen dine saghen opherstaen. doen hise heet gaen predeken al de werelt dore. Eñ hoe dat hi opvoer te hemele. doen hise hadde ghebenedpt.

Onlanghe dar na so vertoegde hem noch Ihc sinen pongren ouer tafle daer si saten eñ aten. Aldaer so berespde hise van hare ongheloeuegheit eñ van der hartheit harer herten. om dat si nit gheloeuen en wouden denghenen diene hadden sien opherstaen van der doet. Dar na so sprac Ihc aldos. Gaet al de menschen. werelt dore. eñ predect dewangelie allen creaturen. Die ane mi gheloeft eñ ghedoept werdt. die sal behouden bliuen. mar di nin gheloeft die sal verdoemt werden.

IN TIME OF PLAGUE

T. Nashe, 1567—1601

ADIEU! farewell earth's bliſs,
This world uncertain is:
Fond are life's luſtful joys,
Death proves them all but toys.
None from his darts can fly:
I am ſick, I muſt die —
Lord have mercy on us!

Strength ſtoops unto the grave,
Worms feed on Hector brave:
Swords may not fight with fate:
Earth ſtill holds ope her gate.
Come! come! the bells do cry:
I am ſick, I muſt die —
Lord have mercy on us!

Rich men, truſt not in wealth,
Gold cannot buy you health;
Phyſic himſelf muſt fade;
All things to end are made;
The plague full ſwift goes by;
I am ſick, I muſt die —
Lord have mercy on us!

Wit with his wantonneſs
Taſteth death's bitterneſs:
Hell's executioner
Hath no ears for to hear
What vain art can reply;
I am ſick, I muſt die —
Lord have mercy on us!

Beauty is but a flower
Which wrinkles will devour:
Brightneſs falls from the air;
Queens have died young and fair;
Duſt hath cloſed Helen's eye:
I am ſick, I muſt die —
Lord have mercy on us!

Haſte therefore each degree
To welcome deſtiny:
Heaven is our heritage,
Earth but a player's ſtage.
Mount we untho the ſky:
I am ſick, I muſt die —
Lord have mercy on us!

The Lord's prayer on the first of these four pages is set in J. van Krimpen's 'Lutetia' roman. The black-letter on the second is attributed to Cornelis Henricx, a Dutch punchcutter, working about 1490. 'In Time of Plague' is set in a roman letter, probably originating from Peter Schoeffer of Gernsheim.

Joh. Enschedé en Zonen, Haarlem
Printers and Typefounders

autres ou fleurissent les bonnes lettres, en taille, & beaux caracteres de lettres principalement Italiennes et Grecques, certes à l'imitation des plus genereux Anciens, qui apres l'honneur des Dieux, ont touiours deferé le second lieu à la Patrie, Ie me suis persuadé plus deuoyr à Icelle qu'a nulle autre, Prouoqué du bon vouloir d'infinis autres, qui pousses d'ung mesme zele enuers elle, tachent, à l'enuy & l'illustrer: les Poetes par leurs Poesies, les Historiographes par leur style moy moins eloquent que Veridique, les Mathematiciens, Philosophes, Architecteurs, Sculpteurs, peintres, & autres, chacun en leur faculté: à tous lesquels ny en moyen ny en occasion, Ie ne me tiens inferieur de pouuoir profiter au publiq: car en me proposant deuant les yeux combien les Hebrieux, les Grecs, les Latins, voyre plusieurs Peuples barbares, ont esté curieux & leur propre langue, iusques à faire conscience, et tenir à honte de se seruir des lettres par autres que par eux inuentees, Ie ne pouuois moy rougir, de la negligence & mes Maieurs en cest endroit, qui ayant de quoy se passer des leurs voisins, ont mieux aymé estre leurs redeuables, que & s'ayder du leur propre: chose d'autant plus à deplourer, que si ton confere mes caracteres Francoys (qui ne scay comment mues sont encores demeurés sauls) à ceux de toutes autres nations, on trouuera qu'ilz ne leur cedent en rien. Ce que auec regret ayant assez longuement considéré, et voyant d'autre part que par une vicissitud des choses, otees nostre Fraynce auoit son tour soit en Armes, soit en Loix, soit en eloquence & la Langue, et toutes bonnes Disciplines, pour ne perdre ce point, en toutes entreprises precipu et necessaire, assauoir & se seruir du temps, apres auoir taillé plusieurs beaux caracteres, dont les vns n'ont encore este en

Caractère de Civilité
Joh. Enschedé en Zonen
Haarlem

qualche cosa di profondo, come di non umano: certe modulazioni, certe flessibilità, certe morbidezze a lui erano sconosciute; là, tra le sue campane, in quella grande aria, in quella gran luce, in quella gran solitudine aveva appreso un linguaggio pieno di sonorità, pieno di note metalliche, di asprezze improvvise, di cupezze gutturali.
O Zolfina, che fate ?

Faccio fieno per la mucca di compare Mecchele, faccio, rispose la bionda ancora china, co'l seno palpitante, a raccoglier l'erba segata.
O Zolfina, e questo odore lo sentite ? io ero in cima al campanile, ero, a guardar le paranze, che tira vento di greco a mare; e voi siete passata di sotto, che cantavate « Fiore d'erbette... » cantavate.

Si fermò, perchè si sentì la gola chiusa a un tratto; stettero in silenzio tutt' e due ad ascoltare il fruscìo vasto dei noci e la ma-

Design for a page (of a novel) by Nicola De Arcangelis
Woodcut by Armando Cermignani
Pescara (Italy)

sanguinem in me manet et Ego in eo. Sicut misit me vivens Pater, et Ego vivo propter Patrem, et qui manducat me vivet propter me. Hic est panis qui de coelo descendit. Non sicut manducaverunt patres vestri manna et mortui sunt: qui manducat hunc panem vivet in aeternum.

Gesù disse alle turbe: Chi mangia la mia carne e beve il mio sangue, rimane in me ed io in lui. Come mi inviò il Padre che è vivente, e io vivo per il Padre; così chi mangia di me, vivrà per me. Questo è il pane disceso dal cielo. Non è come la manna che mangiarono i padri vostri e morirono. Chi mangia di questo pane vivrà in eterno.

Credo

S. - Credo in unum Deum, Patrem omnipotentem, factorem caeli et terrae visibilium omnium et invisibilium.

Al principio

O Dio onnipotente, mi metto alla vostra divina presenza, vi adoro e vi ringrazio di tutti i benefizî a me fatti, confesso umilmente innanzi alla vostra Maestà e a tutti i Santi le mie colpe, commesse con pensieri, parole ed opere: perciò sup-

Page from the « Libro da Messa », designed by Nicola De Arcangelis, Pescara (Italy).
Special edition for the exhibition of fine books, organised by the Fascist Federation of craftsmen, Rome, Anno Santo 1933

Three Books for Lovers

CARROLL LOVERS, TYPE LOVERS, AND FREE LOVERS, ISSUED BY THE PETER PAUPER PRESS, AND AT THE SIGN OF THE BLUE-BEHINDED APE.

For Carroll lovers

THE HUNTING OF THE SNARK, by Lewis Carroll; beautifully illustrated in colors by Edward A. Wilson. 275 copies made especially for the Peter Pauper Press. $ 5.00

For type lovers

CHAMP ROSÉ, the Roman alphabet designed by Geofroy Tory: redrawn, prefaced, and printed in red by Bruce Rogers. 325 copies made for the Peter Pauper Press. $ 3.50

For free lovers

AN IMMORAL ANTHOLOGY, with 30 odd decorations by André Durenceau and prefaced by Robert Wilney. 290 elegant copies issued at the Sign of the Blue-Behinded Ape. $ 10.00

SET IN FUTURA AND GILLIES GOTHIC · BAUER TYPE FOUNDRY · FRANKFURT A·M

M. E. Wilkins · Pembroke

This Thomas Payne was the best match in the village; he was the squire's son, good-looking, and college-educated. Barney had always known that he fancied Charlotte, and had felt a certain triumph that he had won her in the face of it. „You might have somebody that's a good deal better off if you didn't have me," he said to her once, and they both knew whom he meant. „I don't want anybody else," Charlotte had replied, with her shy stateliness. Now Barney thought that she had changed her mind; and why should she not? A girl ought to marry if she could; he could not marry her himself, and should not expect her to remain single all her life for his sake. Of course Charlotte wanted to be married, like other women. This probable desire of Charlotte's for love and marriage in itself, apart from him, thrilled his male fancy with a certain holy awe and respect, from his love for her and utter ignorance of the attitude of womankind. Then, too, he reflected that Thomas Payne would probably make her a good husband. „He can buy

SET IN CORVINUS · BAUER TYPE FOUNDRY · FRANKFURT A·M

ATKINSONS

POINT DU JOUR

a

PERFUME

which possesses all the
sweetness and freshness
of the dawn

POINT DU JOUR IN CASE 15/–

SET IN CORVINUS · BAUER TYPE FOUNDRY · FRANKFURT A·M

M. KNOEDLER AND COMPANY

RESPECTFULLY INVITES YOU TO VIEW

A DECORATIVE SCREEN

Cherry Blossom with Kimono and Obi

by Stewart Carstairs

AT THEIR GALLERIES

14 EAST 57TH STREET · NEW YORK

During the eighteenth century, at the time of the cherry blossom, the people of Tokyo used to have picnics under the trees in full bloom. It is said that the Daimios only were privileged to use tents, so the lower classes, in order to seclude themselves, hung up their haori [outer kimono]. In time, most beautiful kimonos were made for that purpose, and no expense or labor was spared; until one Shogun, disliking the ostentation of the rich merchants, passed an edict forbidding more than sixty pieces of silver being spent on a single kimono. At which time the custom ceased.

SET IN WEISS TYPES · BAUER TYPE FOUNDRY · FRANKFURT A·M

CATALOGUE

OF AN EXHIBITION ILLUSTRATING THE VARIED INTERESTS OF BOOK BUYERS

1450—1600

Selected mainly from the Collections of Members of
THE CLUB OF ODD VOLUMES
And held at the Club House, 50 Mt. Vernon Street
March 18 to March 26, 1922

BOSTON
THE CLUB OF ODD VOLUMES
1922

SET IN WEISS TYPES · BAUER TYPE FOUNDRY · FRANKFURT A·M

COOLAINE

An utterly new Fabric for Summer Wear

As a worthy companion to its famous Spring and Fall woolens, the Forstmann Woolen Company announces the origination of Coolaine . . . an entirely different, utterly new kind of fabric for Summer wear. Coolaine is woven of special yarns in feather-light, crisp weaves that resist heat and moisture. It tailors with suave, perfect-fitting lines and looks as fresh and cool at the end of a hot day as when you first put it on. You may have Coolaine in the version you like best: in charming, cool novelties for country and sports, or in plain weaves for town and travel. And in its sheerest version, it makes one of the newest and loveliest evening gowns. The comfort and practical, wrinkle-resisting service which this smart fabric gives will be found in no other Summer materials. Leading shops are now showing Coolaine in costumes, and by the yard. Forstmann Woolen Co., Passaic, N. J. · Sales Office, Empire State Building, New York City

Forstmann Woolens

SET IN BETON AND TRAFTON SCRIPT · BAUER TYPE FOUNDRY · FRANKFURT A·M

Moët & Chandon

ESTABLISHED 1743

CHAMPAGNE

IMPERIAL CROWN WHITE SEAL

And so at last a fine vintage is wrapped for your cellar. Eight years ago, the grapes proved worthy of Champagne tradition. In the spring of the following year the wine was bottled and reposed in the caves to mellow and mature and to await the full bloom of its character and bouquet. A few months ago it was decided that it had won its right to the Moët & Chandon fame. Then each bottle was bedecked with the insignia of its honored name, and wrapped—never to see the light of day until the happy occasion for which its bubbling gaiety was stored.

LABOURDETTE & CO. INC

SET IN BERNHARD TYPES · BAUER TYPE FOUNDRY · FRANKFURT A·M

CHOOSE THE SEA ROUTE TO CALIFORNIA

PANAMA PACIFIC'S "BIG THREE" HAVE SIZE AND SPEED FOR CONVENIENCE

The sea is wide! – Ah, but what of the deck? It makes such a vast difference in one's pleasure . . . to have a really wide sweep of sun-deck, to stroll into hospitably spacious public salons, to enjoy a siesta in roomy, comfortable cabins . . . That, seasoned travellers stoutly maintain, is the luxury of "Elbow Room", the charm of the "Big Three" to California. And that, confidentially, is what makes those thirteen days so richly enjoyable when you go to California by sea on a Panama Pacific Liner. A dip in the large open-air pool, a delightful dance on deck and then a vagrant hour basking undisturbed in the sun! While the mighty ship takes you with smooth, unnoticed speed to your destination – "The season" on the West Coast. It's so sensible, too, making California your winter rendez-vous. Almost by a flip of the finger you shut off those mounting expenses of a bleak Eastern winter in town or country homes. Perhaps we'd better drop a hint: rates are the lowest ever, with an additional reduction of 25% on round trips by sea. So see your local agent now, the travel authority in your community.

PANAMA PACIFIC LINE

INTERNATIONAL MERCANTILE MARINE COMPANY

SET IN FUTURA · BAUER TYPE FOUNDRY · FRANKFURT A·M

The woodcuts on this and the three following pages by MARK F. SEVERIN are illustrations from "*De Heldentocht van de Alexis, Antwerpsche bark*" (The heroic voyage of the Alexis, an Antwerp barque), written by LODE VERHEES and published by "De Sikkel", Antwerp, 1934.

A·WADE
SHIP
CHANDLER
SEAMAN'S REST

Two illustrations from "Lucignolo", a fairy-tale, from drawings by Piero Bernardini. Printed by the Publishers, R. Bemporad & F.°, Florence.

IL SEGRETO DI PINOCCHIO

Illustrazioni di PIERO BERNARDINI

R. BEMPORAD & F.° EDITORI . FIRENZE

Design for the cover of a fairy-tale, "The Secret of Pinocchio", by Piero Bernardini. Printed by the Publishers, R. Bemporad & F.°, Florence.

LA JEUNE TARENTINE

Pleurez, doux alcyons, ô vous, oiseaux sacrés,
Oiseaux chers à Thétis, doux alcyons, pleurez.
Elle a vécu, Myrto, la jeune Tarentine !
Un vaisseau la portait aux bords de Camarine;
Là, l'hymen, les chansons, les flûtes, lentement
Devaient la reconduire au seuil de son amant.

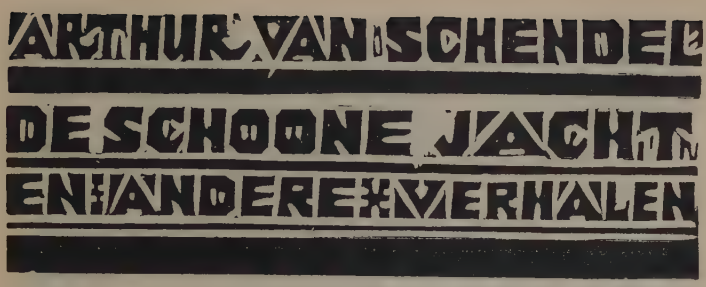
Jean Droit.

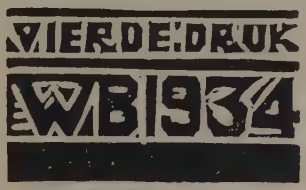
Une clef vigilante a, pour cette journée,
Dans le cèdre enfermé sa robe d'hyménée,
Et l'or dont au festin ses bras seraient parés,
Et pour ses blonds cheveux les parfums préparés.
Mais, seule sur la proue, invoquant les étoiles,
Le vent impétueux qui soufflait dans les voiles
L'enveloppe. Étonnée et loin des matelots,
Elle crie, elle tombe, elle est au sein des flots.

Elle est au sein des flots, la jeune Tarentine.
Son beau corps a roulé sous la vague marine.
Thétis les yeux en pleurs, dans le creux d'un rocher
Aux monstres dévorants eut soin de le cacher.
Par ses ordres bientôt les belles Néréides
L'élèvent au-dessus des demeures humides,
Le portent au rivage, et dans ce monument,
L'ont, au cap du Zéphyr, déposé mollement.
Puis de loin, à grands cris appelant leurs compagnes,
Et les nymphes des bois, des sources, des montagnes,
Toutes, frappant leur sein et traînant un long deuil,
Répétèrent : "Hélas!" autour de son cercueil.

Hélas ! chez ton amant tu n'es point ramenée,
Tu n'as point revêtu ta robe d'hyménée,
L'or autour de tes bras n'a point serré de nœuds,
Les doux parfums n'ont point coulé sur tes cheveux.

G. DE MALHERBE & Cie, IMPRIMEURS, PARIS-XVe, 1935.
(Verses by André Chénier — Illustrations by Jean Droit — Printed from the original wood-blocks)





Jan Poortenaar
Title, woodcut and text page from "De Schoone Jacht" and other stories by Arthur van Schendel. Published by Wereldbibliotheek N.V., Amsterdam, 1934.

DE SCHOONE JACHT

EEN poos geleden was ik bij mijnen oom Theobalt te gast, en met mij was er Roderick, een ridder van den zeekant vandaan. Mijn oom Theobalt is een goed en redelijk man, hij leeft zeer rustig met zijne kleindochter, zich met boeken vermakende en spreekt zelden; het is mij niet aangenaam bij zwijgzame lieden te zijn, derhalve was ik blijde toen Roderick kwam. Hij was een groote geweldige man met zwarte oogen en een zwarten baard, die reeds te grijzen begon; maar ook hij sprak zelden, zoodat mijn verblijf op Bardely wel eentonig geweest zoude zijn, ware het niet om één enkelen voortreffelijken avond. Een kloek jager was hij echter en hij verzelde mij gaarne op de jacht; zoo keerden wij dan een avond in de maand October vermoeid van een genoeglijken tocht terug op het slot en vonden aan het maal mijn oom Theobalt in een spraakzame gezindheid, welke zich thans ook tot Roderick mededeelde. Later bezagen wij — de twee ouderen bij elkander, ik de hand van mijn nichtje houdende — de portretten die in de voorzaal hingen, en mijn oom vertelde bij elk een uitstekende gebeurtenis uit het leven van wien het verbeeldde, Veronica aanvoegende wat zij meende dat hij vergat. Hierna begaven wij ons naar de woonzaal waar mijn oom gemeenlijk den gan-

Three woodcuts from Gustave Flaubert's "Legend of St. Julian", translated into the Dutch language and illustrated by Jan Poortenaar. Published by Wereldbibliotheek N.V., Amsterdam, 1934.

Letterpress Goldinx by
Lorilleux & Bolton Ltd

Specimen of
Water Ink Printing from
Rubber Plates made by
PARAMAT LTD.
LONDON ENGLAND
and printed by
MARSHALL
HARDY LTD.
BRADFORD ENGLAND

Specimen of
Water Ink Printing from
Rubber Plates made by
PARAMAT LTD.
LONDON ENGLAND
and printed by
MARSHALL
HARDY LTD.
BRADFORD ENGLAND

STUDY OF TREES - FROM A PENCIL SKETCH

SPECIMEN OF REPRODUCTION IN HALF-TONE (PENCIL EFFECT)

BLOCK BY L. VAN LEER & Co.,
AMSTERDAM, HOLLAND

PRINTED BY VAN AELST BROS.
MAASTRICHT, HOLLAND

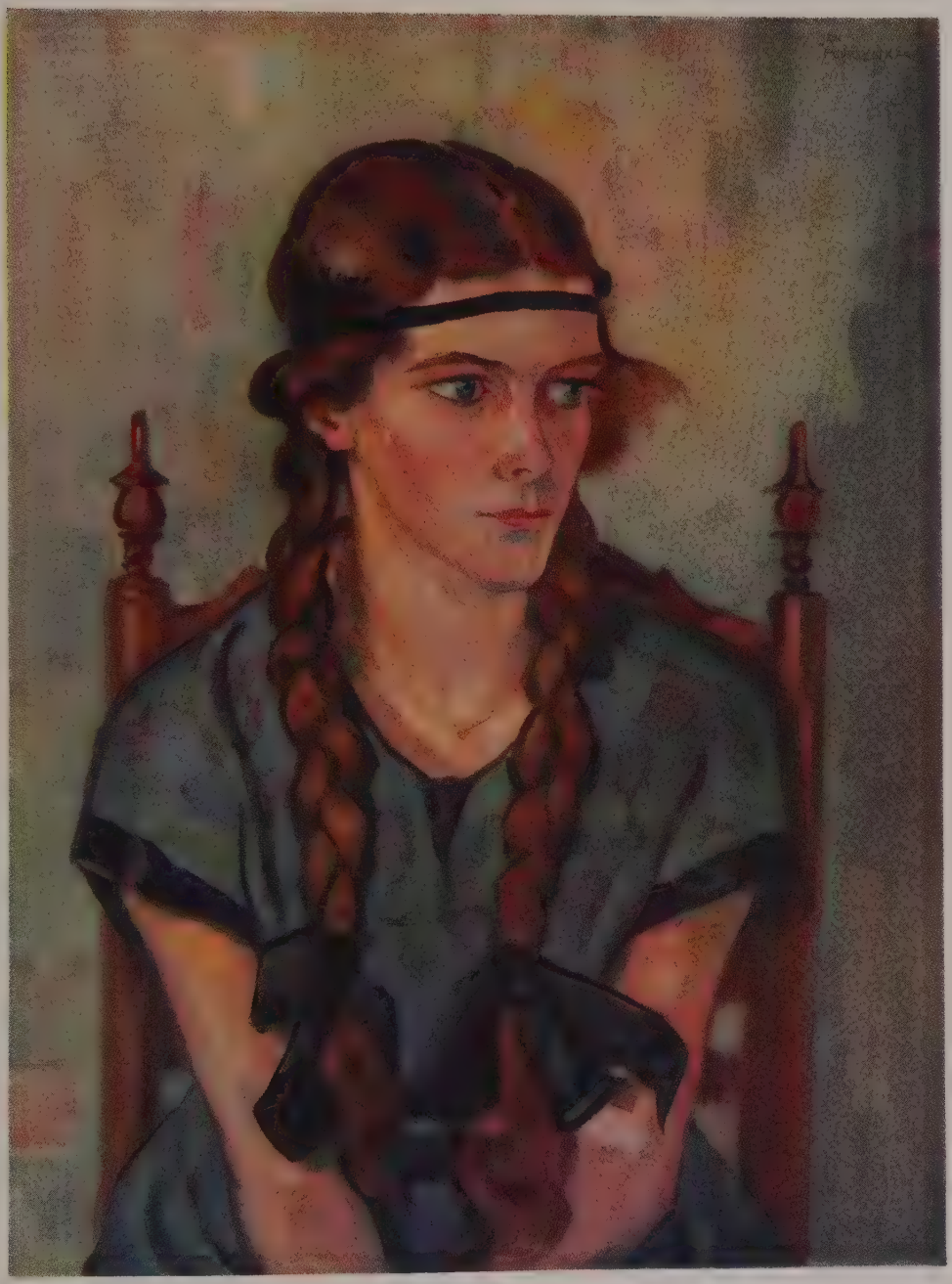
PRINTED ON BALTIMORE-ART-PAPER, LUTKIE & SMIT, AMSTERDAM

A STUDY OF FLOWERS

From the Oil Painting by Jan Poortenaar

Four colour Half Tone Reproduction by W. G. Briggs & Co., Ltd., Tudor House, Chichester Rents, Chancery Lane, London, W.C.2

Blocks printed by F. W. White & Co., Albion House, New North Street, Theobalds Road, London, W.C.1



Portrait of a Girl
from an oil painting
by Jan Poortenaar

Three colour blocks by
Dalziel Foundry, Ltd.
19 Earl St. London E.C.2

Trichromatic Inks by
Lorilleux & Bolton Ltd.

After the printing of the text which refers to this Plate it was found that a glossy paper gave better results, so the original idea of using matt paper was abandoned.

"SUMMER" – FROM AN OIL PAINTING BY JAN POORTENAAR

SPECIMEN OF THREE-COLOUR PROCESS

BLOCKS BY GENERAL ENGRAVING WORKS
AMSTERDAM, HOLLAND

PRINTED BY VAN AELST BROS.
MAASTRICHT, HOLLAND

This paper is Polychroom 527½ from Wholesale Paper Trade G. H. BUHRMANN Ltd., Amsterdam (Holland)

COLLOTYPE

Reproduction of an etching by REMBRANDT, 1633,
illustration for the book „Der zee-vaert lof".

Printed by L. van Leer & Co. N.V., Amsterdam.

Bookbinding, attributed to Jacob Krause, binder to the court of Saxony from 1566 to 1585. Oriental design.

By courtesy of Messrs. C. G. BOERNER, Leipzic

Reproduction printed by
J. MILES & CO., LTD., Wardour Street, London, W.1

Bookbinding in red morocco, gold-tooled, by A. M. Derome, binder to the King of France from 1685 to 1758. This binding was made for the Queen Maria Leszczinska, wife of Louis XV.

By courtesy of Messrs C. G. BOERNER, Leipzic

Reproduction printed by
J. MILES & CO., LTD., Wardour Street, London, W.1

Venetian bookbinding, XVIth century, oriental design. The binding contains decrees of the Senate and of the Doge Cicogna.

By courtesy of Messrs. C. G. BOERNER, Leipzig

Reproduction printed by
J. MILES & CO., LTD., Wardour Street, London, W.1

ORIGINAL LITHOGRAPH BY JAN POORTENAAR

PRINTED BY LITHOGRAPHY LANKHOUT, THE HAGUE, HOLLAND.

MEDIAEVAL LIBRARY, ST. WALBURG'S, ZUTPHEN, HOLLAND.